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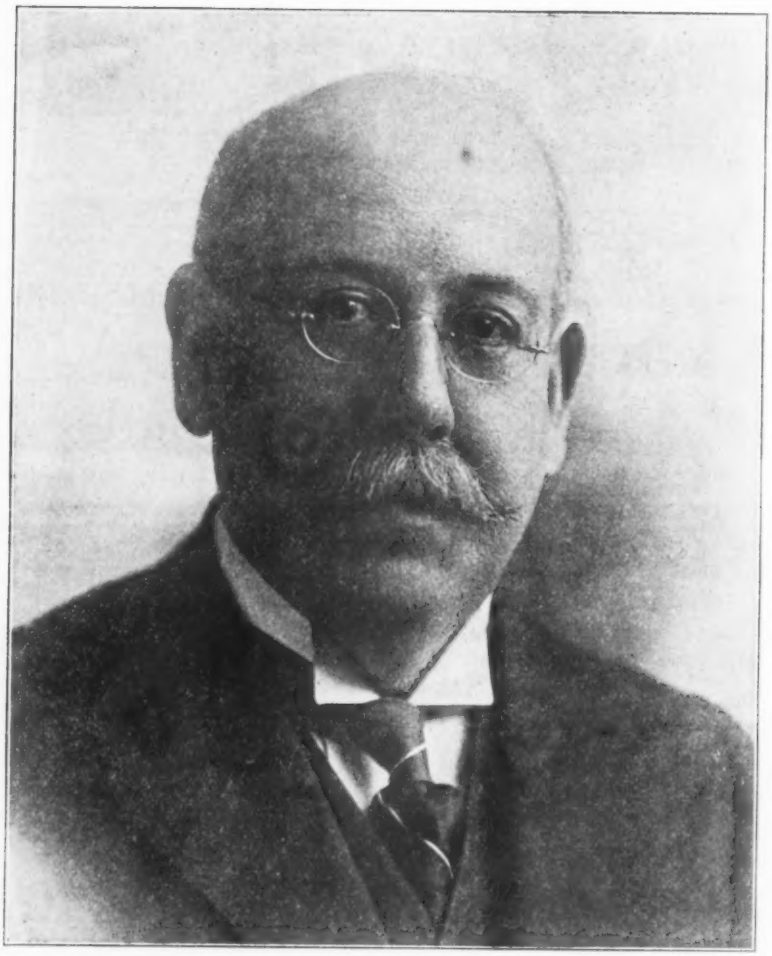
JOSE GUILLERMO DIAZ, Ph.G., M.D.

HAVANA, CUBA

Translator, and Editor of the Spanish edition of the United States Pharmacopoeia



DR. JOSE G. DIAZ

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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JOSÉ GUILLERMO DIAZ.

Dr. José Guillermo Diaz was born in Havana, Cuba, December 12, 1863. His early education was received in the high school course of the *Instituto de la Habana*, from which he graduated in 1879. In the same year he matriculated at the School of Pharmacy of the University of Havana, and graduated in 1883; in 1887 he received the Doctor's degree from the same institution.

In 1889 he was appointed assistant professor in the School of Pharmacy and continued to hold this position until 1896, when, on account of the war with Spain, he removed to New York City to help in the cause of independence. After the war Prof. Diaz returned to Havana and was again appointed assistant professor. In 1900 he was elected professor of Practical Pharmacy, which chair he still holds.

Dr. Diaz is the owner of a retail drug store in Havana. This store was established by his father, Dr. José Diaz, in 1842, in the same building now occupied by his son, at Monte 412.

In 1910 Dr. Diaz was present as member of the U. S. Pharmacopoeial Convention, representing the University of Havana. He translated the U. S. P. VIII into Spanish and also the last revision. In 1915 Dr. Diaz was elected a member of the Academy of Medical Sciences of Havana. He has attended several of the annual conventions of the American Pharmaceutical Association.

J. P. A.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

PHARMACISTS SHOULD HOLD POSITIONS IN SEVERAL GOVERNMENT DEPARTMENTS.

PHARMACISTS throughout the country, assisted to some extent by medical men, are making a strong effort to have pharmacy recognized by the Government in the creation of a pharmaceutical corps in the U. S. Army. By granting such recognition the United States will not be establishing a precedent nor take the lead among nations in such establishment, for France many years ago provided a pharmaceutical corps as a branch of its military organization and, since the world conflict, has added greatly to its duties and numerical strength, emphasizing the words of the senator from Rhone when he said "that the members of the French Pharmaceutical Corps have in their humble sphere contributed most eminent service to save the country." If then France has found that the services of pharmacists are essential to the men of their armies, the experience should be accepted as of value to our soldiers.

There is no reason why medical men in the Army should be deprived of qualified pharmaceutical service when this is deemed essential in civil practice, nor is there reason why efficient pharmaceutical service, which is provided to the men in civil life, under legal regulations, should be withdrawn from them when they enter upon duties which will most certainly call for medical and surgical attention. If the measures now before Congress are defective in any way or seriously conflict with the present military organization, then the subject should be investigated and the inclusion of a pharmaceutical corps made possible. The time for action is now. What French pharmacists have done can be done by American pharmacists, for the high position of American pharmacy has been and is recognized in Europe. The *Pharmaceutical Journal* (England) of February 9, 1918, says in an editorial:

> "The United States has been uncommonly fortunate in the possession of a remarkable array of eminent pharmacists who have rendered signal service to the science of pharmacy and to the cause of pharmaceutical education and progress."

But this is incidental at this time for this writing, as there is no desire to interpose a new subject while the more important one for the present is still in the shaping. However, if the Government once gives recognition to pharmacy and realizes the possibilities of its service, then the further necessity will be recognized, that there are departments in which the services of pharmacists will be helpful not only to the Government but to industries which contribute to the country's prosperity and which the Government desires to coöperate with. Recently, in preparing the war tax measure, and more specifically that portion which concerns the tax on alcohol, it became very evident that the framers of these regulations

were unacquainted with retail and manufacturing pharmacy, and resulted in unintentional exactions that could have been avoided if a pharmacist was attached to the Revenue Department. It also stands to reason that in the Bureau of Chemistry more trained pharmacists should be employed. It need not be emphasized that the Government not only desires to be fair and shape the regulations in such a way that they will protect the public but is also equally desirous of having them practicable and adaptable to the industries concerned. The sincerity of pharmacists is clearly evidenced in the preparation of standards in the United States Pharmacopoeia and National Formulary; but aside from substances coming within the scope of these standards there are products which differ and still there is commercial need for them. Herein trained pharmacists can be of great service, and therefore the resolutions offered recently by Dr. J. H. Beal and printed on p. 217 of the February JOURNAL, will bear reproduction. The matter is deserving of attention, not only by pharmaceutical organizations, but by the Government as well; for President Wilson has repeatedly referred to the importance of Government coöperation with the industries and reversely. The resolution follows:

"WHEREAS, It does not appear that at the present time there are experienced and practically trained representatives of the drug manufacturing and selling industries connected with the U. S. Bureau of Chemistry or with the U. S. Bureau of Internal Revenue, both of which bureaus are charged with the interpretation and administration of laws applying to the manufacturing and selling of drugs and medicinal products; and

"WHEREAS, The just and equitable interpretation and application of such laws frequently involves the consideration of technical questions which can be properly answered only by those who have had technical training and practical experience in the manufacturing and selling of drugs and medicinal products; therefore be it

"*Resolved*, That we recommend that the various associations and societies representing the several divisions of the drug trade bring the above statements of facts to the attention of the proper authorities at Washington and urge upon them the appointment in the Bureau of Chemistry and in the Bureau of Internal Revenue of one or more representatives familiar by practical experience with the manufacturing and handling of drugs and medicinal products and of the material used therein."

Another instance that might be cited showing that the departments of the Government need the advice of pharmacists is indicated in *Document 564* of the War Department, from the office of the Quartermaster General. The *Manual* contains definitions, which, on the whole, are sufficiently clear and comprehensive, but such statements as the following also occur and could readily have been correctly given if there had been consultation and coöperation.

"*Aniline*. Dye used in highly colored confectionery. A product of petroleum. The red shades are harmless, but the chemicals used in making blue, green and other colors are injurious."

"*Ferment.* A substance capable of producing yeast fermentation."

"*Glucose.* A cheap sugar that will not easily crystallize or a cheap syrup that will not crystallize, very much like 'Silver Drip,' but much thicker. Glucose is often made by treating cornmeal with sulphuric acid. It is very wholesome."

E. G. E.

THE SIGNIFICANCE OF MILITARY RANK.

THE following epigram is on the letter head of the New York State Department of Health: "Public health is purchasable. Within natural limitations every community can determine its own death rate." The statement is both true and of great significance and speaks much for the progress of medicine, and pharmacists are glad to accord to the practitioners of medicine and surgery every credit that is justly due them, in fact the achievements of medicine and of surgery have perhaps not generally received due consideration. Every now and then some one attempts to express the value of "preventive" medicine in dollars. The present war is again testifying to the wonderful progress medicine and surgery have made, to the real heroism and genuine patriotism of surgeons and physicians. There are no dangers they do not risk, without concern for their own health and comfort. The conferring of military rank to medical men in the Army and Navy service is a just and rightful recognition, and places them in position to do the most efficient work. Not that they could not and would not do equally as good work without such rank, but the opportunities are enhanced by this recognition, the very distinction given them commands the respect and obedience of those whom they serve. In large, and especially military, organizations, rank is essential to efficiency; it establishes a relationship that would not exist without the distinction, and stimulates a desire to advance.

In giving all due credit to the medical men for their achievements, for making valuable suggestions, for their sacrifices in behalf of science and humanity, the fact cannot be ignored that pharmacists have had a part in these accomplishments. It is true, perhaps, that medical men have devised some of the means used in their practice, but, as a rule, they were too busily engaged in their special field of activity to give attention to the preparation of agents they realized the need of. Lister was always ready to give Pasteur credit for his investigations, and Sertürner, Labarraque, Pelletier, Caventou, Gaedeke and the host of others who studied and developed the active constituents of drugs are certainly entitled to recognition as contributors to medical advance, and when modern serum therapy and physiological standardization are considered, American pharmacists, many of them humble retail pharmacists, have contributed their share in investigations and accomplishments. The spirit of the modern world looks toward the application of every scrap of knowledge that can be collected and coördinated, in every

field where opportunity for its application can by any possibility be found. It is not to be expected that military surgeons and physicians should accord pharmacists the consideration they would if a degree of rank was given them. Assign to the most noted scientist the duty of scrubbing floors and other menial labor, and it is only in case of utmost emergency that his views or assistance will be asked in the matter of scientific subjects with which he is thoroughly informed.

England recently has given rank to some pharmacists engaged in France, and a report of a *medical officer* who also refers to the colonial and foreign pharmaceutical corps, in brief, demonstrates the value of commissions to pharmacists. He states:

"The first point that struck me as noteworthy was the complete confidence reposed by the commanding officer and medical officers in the pharmacist and his work; secondly, the frequent consultations as to the preparations to be utilized in the treatment of cases; thirdly, the general elevation of the importance of the pharmaceutical branch of the service; fourthly, the insistence of colonial officers on the imperative necessity for nothing but fully qualified pharmacists being responsible for the dispensaries; and, fifthly, the consternation with which they regard the antiquated pharmaceutical arrangements of the British medical service as compared with the modern and efficient organization of the colonial and foreign arms of this corps. With reference to the first point, it is a fact that in 99 percent of cases an officer has more of the confidence of his commissioned officers and fellow officers than a non-commissioned officer, and in the case of prescribing, as in the second instance, it follows that ultimately more benefit will accrue to the patient. The idea is frequently harbored that because the dispenser is not commissioned his statements are not fully reliable. This is obviously a fallacy; but, at the same time, it must be admitted that commissioned rank increases the standing of a person. Again, with reference to the second point, it is fairly evident that medical officers consider it somewhat beneath their dignity to ask for information on a subject in which they are supposed to be proficient, especially as the information would be given by a non-commissioned officer. The sum and substance of the whole is that where treatment is specialized (*i. e.*, from the casualty clearing station down), the presence of a pharmacist who could be consulted with confidence, would be of a distinct advantage to the patient; and that to insure confidence and coöperation, the granting of commissions to experienced pharmacists is essential."

These very clear and modest statements certainly should appeal to those medical men who are fearful that pharmacists will be given a rank and thereby injure their standing in some unaccountable way. It would be desirable for them to know that those who serve them are qualified to do so intelligently and not to be in doubt as to whether the dispenser has had training or simply has been assigned to dispensing duty because he can read the number on a container, and has no knowledge of drugs whatever. Such a condition is impossible in civil life, why should it obtain in the Army? It stands to reason that there are qualified pharmacists, many are enlisted as privates; it is as reprehensible to waste talent as material things. There is something wrong somewhere; let the situation be cleared up. Within limitations, the U. S. Army can determine its own death rate and pharmaceutical service will have a part. Pharmacy can be ignored, but not without sacrifice of men.

E. G. E.

THE NEED FOR A FEDERATION OF ALL PHARMACEUTICAL ORGANIZATIONS.*

NEVER in the history of American pharmacy has there been greater urgency for a federation of pharmaceutical organizations than at present. Leaders in pharmacy have recognized the need ever since the inception of the American Pharmaceutical Association, but evidently the movement has never been sufficiently energized to bring about the culmination.

The military organization presents in a way distinct and separate branches, but all of them are coördinated so as to utilize the various activities represented for a common purpose. To permit these corps to act independently throughout would thwart their efforts. And so the multiplication of organizations of an industry, unless joined in common purposes, does not permit of the grand efforts, those in which all should be concerned. Let it be admitted that all the national pharmaceutical associations serve those branches which they directly represent, that each of them is essential for carrying out special aims and that these have no interest for the other divisions of the drug industries; it still remains that these sections are related, all are finally dependent upon the distributors; the reverse, of course, applies as well. For example, there has been much said about doing away with the middlemen, but their place has been so firmly fixed that up to the present they are as important a branch as ever and will so continue because their services are necessary. The point then is to unite these links into a strong chain for the purposes in which the aid of all is essential. If this can be properly worked out it will develop that there are many problems, in common, which can be solved and movements that can be carried into more effective execution. Wise executive measures may also reduce the large overhead expense which encumbers most of these organizations. It stands to reason that, if the coöperation of many and their numerical strength can bring about a better recognition of pharmacy, then every division will benefit.

To prevent the coalition of forces, persuading them to remain inactive or work at cross-points, gives strength to the adversary. The reverse then is true that, if there can be unison of action, if the separate branches can be counted on for their support and numerical strength in important projects, there is greater possibility for achieving in them. It would seem to be equally true that if all these separate bodies can be brought into a federation each will benefit in many ways. It is of paramount importance that the local and state associations become attached, for the common interest of an association should represent the interest of the in-

* See address of Ex-President Frederick J. Wulling, September JOURNAL, 1917, p. 778, October number, p. 854, and message of Acting President A. R. L. Dohme, p. 117, February issue, 1918.

dividual member. Each one of the societies referred to seeks to impress the individual that his efforts are enhanced by association work, and if the argument will hold then certainly it is equally applicable, and in a larger degree, that the federation of closely related associations must be productive of increased relative benefits. Such organization will offer greater opportunities for coöperation of the allied interests, for shaping and regulating the drug business in general on a more satisfactory and profitable basis, for making possible more rational legislation, and coördinating the system of teaching with the present-day needs and at the same time developing what is so essential for the progress of pharmacy, namely, research. We need a materia medica that will be broad enough to meet the views of all practitioners of medicine, and that will draw more extensively from our own resources and products of our industries.

Pharmacy is entitled to representation in the departments of the Government, deserves recognition in the military service, but without concerted action and with indifferent support of the medical profession and the laity, the paths that lead to success are not smooth.

The minds of many should be occupied with this question of federating the body-pharmaceutic, and that there must be a way of impressing the importance of pharmacy, that divisionalism has not done so, and that federation may be the solution of the vexing problem. In this proposition the situation of the drug business should be faced, and not the impossible attempted; it is a problem of coordination and coöperation; we must realize that the development of the drug industries has been influenced by economic conditions, and these cannot be changed at will, but there is a possibility of having the branches unite in common purposes and systematize these endeavors for the good of all associated organizations.

"To know that which before us lies in daily life is the prime of wisdom."

A committee has recently been appointed to study the possibility and practicability of a federation and outline a plan of procedure and the members of it are now seriously engaged with their assigned duties. This writing is therefore in the interest of the problem to the extent of encouraging all members of the Association to study the subject. The greatest fault of associations is to give approval to many recommendations, resolve and thereafter forget. The proceedings of our Association record many wise suggestions that were enthusiastically received by the members but were never utilized by them. Resolutions should have a deeper significance.

E. G. E.

SCIENTIFIC SECTION

THE DETERIORATION OF "U. S. P." AND "FAT-FREE" TINCTURES OF DIGITALIS.*

BY PAUL S. PITTENGER AND H. K. MULFORD, JR.

Many papers have been published on the subject of digitalis, in which practically all of the authors conclude that the galenical preparations of digitalis deteriorate quite rapidly.

The laboratories connected with the larger pharmaceutical manufacturing houses, although using many different methods of assay, all found that these preparations deteriorated so rapidly that they deemed it necessary to warn their customers of this fact by placing small labels upon the containers reading as follows:

"Owing to the rapid deterioration of preparations of digitalis, they should only be purchased in quantities sufficient to meet immediate demands."

The more ethical manufacturers also state upon the label the date of manufacture in order that the druggist or physician may know the age of the particular preparation he is dispensing or administering.

Dr. George B. Roth, Government Pharmacologist, states in the conclusion of his paper entitled "Digitalis Standardization"† "in view of the fact that deterioration of digitalis occurs so rapidly it is advisable that, if such preparations are to be marketed, the date of their manufacture should be stated, so that physicians may know the age of the preparations and may not be misguided into purchasing worthless preparations."

Hatcher,[1] however, in an article entitled "Observations on the Keeping Properties of Digitalis and Some of Its Preparations" gives the results of many tests made upon old samples of the drug, and arrived at the conclusion that preparations of digitalis do not deteriorate. He found that in many cases samples from two to twenty years old were as active, and in some cases more active, than the freshly prepared samples and therefore concluded that digitalis preparations do not deteriorate.

As the investigations of Fränkel,[2] Edmonds and Hale,[3] Hale,[4] Pittenger,[5] and others show that the digitalis preparations upon the market vary hundreds of percent, there is every reason to believe that the preparations which showed standard activity after several years may have originally been six or eight times standard strength.

It is the authors opinion that the only way in which any definite information can be obtained as to the rate of deterioration of a particular drug is to prepare

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* Read before Scientific Section, A. Ph. A., Indianapolis meeting, 1917.

† Roth, *Hygienic Laboratory Bulletin*, No. 102, 1916.

[1] Hatcher, *Druggists' Circular*, June 1913, page 325.

[2] Fränkel, *Charite-Ann.*, Berlin, 1881, VI, page 207.

[3] Edmonds and Hale, *Hygienic Lab. Bulletin*, No. 48, 1909.

[4] Hale, *Hygienic Lab. Bull.*, No. 74, 1911.

[5] Pittenger, Text-Book "Biochemic Drug Assay Methods," 1914, page 6.

a fresh tincture or fluid extract of the same, test it immediately after it is prepared and then retest the *same preparation* at intervals of a few months. In this way absolute scientific information can be obtained.

Roth, in the paper referred to, shows that "fat-free" tinctures of digitalis show a marked deterioration after five to seven months. At several of the medical societies, which the authors have attended during the past year, the remark has been made during the discussion of papers that the so-called "fat-free" or "defatted" tinctures of digitalis deteriorate more rapidly than the U. S. P. tinctures. These remarks, however, were made without the support of experimental data. In order to prove, therefore, whether or not tinctures of digitalis deteriorate, and if so, whether the "fat-free" preparations deteriorate more or less rapidly than the regular U. S. P. tinctures, we carried out the following experiments:

A sample of digitalis drug was obtained from different sources, namely, H. K. Mulford Co., P. E. Anderson, Werner & Gerathy, McKesson & Robbins and the National Aniline & Chemical Company. Each lot of drug was divided into three parts, "A," "B," and "C."

"A" was percolated with fifty percent alcohol and made into the regular U. S. P. VIII tincture.

"B" was percolated with benzine until a small quantity of the percolate evaporated to dryness on a watch crystal left no trace of fat, thus proving that the fat had been entirely removed from the drug. The drug was then spread out on paper until the benzine evaporated. The drug was then moistened, repacked in the percolator, macerated, and percolated with fifty percent alcohol to tincture strength.

"C" was "defatted" the same as given under "B," but was macerated and percolated with eighty percent alcohol instead of fifty percent alcohol.

Each of the fifteen samples were assayed immediately after they were prepared, re-assayed after four or five months had elapsed and again after seven or eight months.

As there is no satisfactory chemical method for assaying digitalis, the above preparations were tested by the Reed and Vanderkleed Guinea-Pig Method, which consists in determining the minimum dose per two hundred and fifty gramme body-weight of animal necessary to cause the death of the animal within twenty-four hours, when the preparation is subcutaneously injected. The standard for tincture of digitalis is 1.0 mil (Cc.) per two hundred and fifty gramme body-weight of animal.

The following tables show the detailed results of these experiments:

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 1 A. H. K. M. Co. drug, U. S. P. VIII. Menstruum 50 percent. Date of test, 6-28-16	0.4	285	0.45	Recovered
	0.6	215	0.51	Recovered
	0.6	225	0.54	Recovered
	0.7	250	0.7	Recovered
	0.8[1]	345	1.1	Recovered
	0.8[1]	260	0.83	Died
	0.8[1]	185	0.95	Died
	0.9	250	0.9	Died
	1.0	210	0.84	Died
	1.0	245	0.98	Died

[1] M. L. D. = 0.8 = 125.0%.

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 1 A. Same drug. Second test. After 5 months. Date of test, 11–29–16	1.2	310	1.48	Recovered
	1.3	350	1.82	Recovered
	1.3	385	2.0	Recovered
	1.4	390	2.18	Recovered
	1.6	435	2.78	Recovered
	1.6	335	2.14	Recovered
	1.6	350	2.24	Recovered
	1.8[1]	485	3.49	Died
	1.8[1]	340	2.44	Died
	2.0	250	2.0	Died
[1] M. L. D. = 1.8 = 55.5%.				
No. 1 A. Third test after eight months. Date of test, 2–1–17	1.8	405	2.91	Recovered
	2.0	400	3.2	Recovered
	2.2	420	3.69	Recovered
	2.5	345	3.45	Recovered
	2.6	405	4.21	Recovered
	2.6	395	4.1	Recovered
	2.6	420	4.36	Recovered
	2.7[1]	410	4.42	Died
	2.7[1]	360	3.88	Died
	2.7[1]	435	4.69	Died
	2.8	395	4.42	Died
	2.8	425	4.76	Died
	2.8	395	4.42	Died
	3.0	395	4.74	Died
[1] M. L. D. = 2.7 = 37.0%.				
No. 1 B. Same drug as No. 1 A. "Defatted" U. S. P. VIII. Menstruum, 50 percent. Date of test, 6–28–16	0.8	230	0.73	Recovered
	1.0	220	0.88	Recovered
	1.0	225	0.9	Recovered
	1.0	235	0.94	Recovered
	1.0	245	1.01	Died
	1.1	245	1.07	Recovered
	1.1	280	1.23	Recovered
	1.2	190	0.91	Recovered
	1.2	325	1.6	Recovered
	1.3	270	1.4	Recovered
	1.3	225	1.17	Died
	1.4[1]	270	1.5	Died
	1.4[1]	190	1.06	Died
	1.5	250	1.5	Died
[1] M. L. D. = 1.4 = 71.5%.				
No. 1 B. Second test after 5 months. Date of test, 11–29–16.	1.2	425	2.04	Recovered
	1.4	335	1.87	Recovered
	1.4	440	2.46	Recovered
	1.6[1]	390	2.49	Died
	1.6[1]	355	2.27	Died
	1.8	420	3.02	Died
[1] M. L. D. = 1.6 = 62.6%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 1 B. Third test after 8 months. Date of test, 2-1-17	1.4	410	2.29	Recovered
	1.6	405	2.59	Recovered
	1.8	405	2.91	Recovered
	1.8	405	2.91	Recovered
	2.0	350	2.8	Recovered
	2.0	330	2.64	Recovered
	2.2	405	3.56	Recovered
	2.3	370	3.4	Recovered
	2.3	410	3.77	Recovered
	2.4[1]	305	2.92	Died
	2.4[1]	385	3.61	Died
	2.5	405	4.05	Died
[1] M. L. D. = 2.4 = 41.7%.				
No. 1 C. Same drug as No. 1 A and No. 1 B. "Defatted" 80 percent alcohol menstruum. Date of test, 6-28-16	0.5	225	0.45	Recovered
	0.6	250	0.6	Recovered
	0.6	240	0.57	Recovered
	0.6	270	0.64	Died
	0.7	205	0.57	Recovered
	0.7	245	0.68	Recovered
	0.8[1]	285	0.91	Died
	0.8[1]	335	1.07	Died
	0.8[1]	205	0.65	Died
	0.0	250	1.0	Died
[1] M. L. D. = 0.8 = 125.0%.				
No. 1 C. Second test after 5 months. Date of test, 11-29-16	0.6	390	0.93	Recovered
	0.8	370	1.18	Recovered
	0.9	420	1.51	Died
	0.9	405	1.45	Recovered
	0.9	395	1.42	Recovered
	0.9	250	0.9	Recovered
	1.0	450	1.8	Died
	1.0	410	1.04	Recovered
	1.0	460	1.84	Recovered
	1.1	250	1.1	Recovered
	1.2[1]	375	1.8	Died
	1.2[1]	395	1.89	Died
	1.3	500	2.6	Died
	1.3	250	1.3	Died
[1] M. L. D. = 1.2 = 83.3%.				
No. 1 C. Third test after 8 months. Date of test, 2-1-17	1.1	400	1.76	Recovered
	1.1	370	1.62	Recovered
	1.2	400	1.92	Recovered
	1.2	370	1.77	Died
	1.2	335	1.6	Recovered
	1.3[1]	300	1.56	Died
	1.3[1]	380	1.97	Died
	1.3[1]	360	1.87	Died
	1.4	375	2.1	Died
	1.4	270	1.51	Died
	1.4	355	1.98	Died
	1.5	455	2.73	Died
	1.6	455	2.91	Died
	1.8	415	2.98	Died
[1] M. L. D. = 1.3 = 76.1%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 2 A. Drug from P. E. Anderson, U. S. P. VIII. Menstruum, 50 percent. First test, 7-6-16	0.4	235	0.37	Recovered
	0.6	195	0.47	Recovered
	0.6	295	0.7	Recovered
	0.7	250	0.7	Recovered
	0.8[1]	200	0.64	Died
	0.8[1]	185	0.59	Died
	1.0	265	1.06	Died
	1.2	295	1.41	Died
[1] M. L. D. = 0.8 = 125%.				
No. 2 A. Second test after 4 months. Date of test, 11-29-16	0.7	325	0.91	Recovered
	0.8	440	1.4	Recovered
	1.0	435	1.74	Recovered
	1.1	295	1.29	Recovered
	1.2	380	1.82	Recovered
	1.2	375	1.8	Recovered
	1.3	325	1.67	Recovered
	1.3	425	2.21	Recovered
	1.4[1]	310	1.73	Died
	1.4[1]	450	2.52	Died
[1] M. L. D. = 1.4 = 71.4%.				
No. 2 A. Third test after 7 months. Date of test, 2-1-17	1.4	355	1.98	Recovered
	1.4	385	2.15	Recovered
	1.5	350	2.1	Died
	1.5	305	1.83	Recovered
	1.5	355	2.13	Recovered
	1.6[1]	360	2.3	Died
	1.6[1]	325	2.08	Died
	1.6[1]	380	2.43	Died
[1] M. L. D. = 1.6 = 62.5%.				
No. 2 B. Same drug as No. 2 A. "Defatted" U. S. P. VIII. Menstruum, 50 percent. Date of test, 7-6-16	0.8	330	1.05	Recovered
	0.8	240	0.76	Recovered
	0.9	235	0.75	Recovered
	1.0	245	0.98	Recovered
	1.0	265	1.06	Recovered
	1.0	230	0.92	Recovered
	1.0	265	1.06	Recovered
	1.1[1]	425	1.87	Died
	1.1[1]	500	2.2	Died
	1.2	250	1.2	Died
[1] M. L. D. = 1.1 = 90.9%.				
No. 2 B. Second test after 4 months. Date of test, 11-29-16	1.0	465	1.86	Recovered
	1.1	390	1.71	Recovered
	1.2	390	1.87	Recovered
	1.2	375	1.8	Recovered
	1.4[1]	365	2.04	Died
	1.4[1]	365	2.04	Died
	1.6	395	2.52	Died
	1.6	355	2.41	Died
[1] M. L. D. = 1.4 = 71.4%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 2 B. Third test after 7 months. Date of test, 2-1-17	1.2	435	2.08	Recovered
	1.3	335	1.76	Recovered
	1.3	250	1.3	Recovered
	1.4[1]	330	1.84	Died
	1.4[1]	255	1.42	Died
	1.4[1]	430	2.4	Died
	1.5	420	2.52	Died
	1.5	320	1.92	Died
	1.6	350	2.24	Died
	1.6	450	2.88	Died
[1] M. L. D. = 1.4 = 71.4%.				
No. 2 A. "Defatted" 80 percent alcohol menstruum. Date of test, 7-6-16	0.2	220	0.176	Recovered
	0.3	260	0.31	Recovered
	0.4	185	0.29	Recovered
	0.4	260	0.41	Recovered
	0.4	215	0.34	Recovered
	0.5[1]	270	0.54	Died
	0.5[1]	310	0.62	Died
	0.6	310	0.74	Died
	0.6	215	0.51	Died
	0.7	250	0.7	Died
[1] M. L. D. = 0.5 = 200%.				
No. 2 C. Second test after 4 months. Date of test, 11-29-16	0.4	365	0.58	Recovered
	0.5	485	0.97	Recovered
	0.5	385	0.77	Recovered
	0.6[1]	340	0.81	Died
	0.6	335	0.8	Recovered
	0.6[1]	415	0.99	Died
	0.6[1]	395	0.94	Died
	0.7	250	0.7	Died
[1] M. L. D. = 0.6 = 133%.				
No. 2 C. Third test after 7 months. Date of test, 2-1-17	0.6	390	0.93	Recovered
	0.6	395	0.94	Recovered
	0.7	500	1.4	Recovered
	0.7	400	1.12	Recovered
	0.7	305	1.13	Recovered
	0.8[1]	250	0.8	Died
	0.8[1]	450	1.44	Died
	0.8	410	1.31	Died
	0.9	250	0.9	Died
	0.9	500	1.8	Died
[1] M. L. D. = 0.8 = 125%.				
No. 3 A. Drug from Werner & Gerathy, U. S. P. VIII. Menstruum, 50 percent. Date of test, 7-6-16	1.0	305	1.22	Recovered
	1.0	305	1.22	Recovered
	1.1	235	1.03	Recovered
	1.1	250	1.1	Recovered
	1.2[1]	275	1.32	Died
	1.2[1]	335	1.6	Died
	1.2[1]	245	1.1	Died
	1.3	250	1.3	Died
	1.3	500	2.6	Died
	1.4	245	1.37	Died
[1] M. L. D. = 1.2 = 83.3%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 3 A. Second test after 4 months. Date of test, 11–29–16	1.2	350	1.61	Recovered
	1.4	245	1.37	Recovered
	1.4	400	2.24	Recovered
	1.6[1]	390	2.49	Died
	1.6	245	1.56	Died
	1.7	365	2.48	Died
[1] M. L. D. = 1.6 = 62.5%.				
No. 3 A. Third test after 7 months. Date of test, 2–1–17	1.4	345	1.93	Recovered
	1.4	405	2.26	Recovered
	1.4	305	1.7	Recovered
	1.4	335	1.87	Died
	1.5[1]	300	1.8	Died
	1.5[1]	415	2.49	Died
	1.5[1]	345	2.07	Died
	1.6	415	2.65	Died
	1.6	425	2.72	Died
	1.6	475	3.04	Died
[1] M. L. D. = 1.5 = 62.0%.				
No. 3 B. Same drug as No. 3 A. "Defatted" U. S. P. VIII. Menstruum, 50 percent. Date of test, 7–6–16	0.6	195	0.46	Recovered
	0.6	225	0.54	Recovered
	0.8	295	0.94	Recovered
	0.8	285	0.91	Recovered
	1.0	230	0.92	Recovered
	1.2	220	1.05	Recovered
	1.4	230	1.28	Recovered
	1.4	260	1.45	Recovered
	1.5	250	1.5	Recovered
	1.6[1]	285	2.8	Died
	1.6[1]	305	1.95	Died
	1.8	250	1.8	Died
[1] M. L. D. = 1.6 = 62.5%.				
No. 3 B. Second test after 4 months. Date of test, 11–29–16	1.4	330	1.84	Recovered
	1.4	375	2.1	Recovered
	1.6[1]	445	2.84	Died
	1.6[1]	375	2.4	Died
	1.8	285	2.05	Died
	1.8	360	2.59	Died
[1] M. L. D. = 1.6 = 62.5%.				
No. 3 B. Third test after 7 months. Date of test, 2–1–17	1.4	355	1.98	Recovered
	1.4	350	1.96	Recovered
	1.4	340	1.9	Recovered
	1.5	435	2.61	Recovered
	1.5	375	2.25	Died
	1.5	345	2.07	Recovered
	1.5	250	1.5	Recovered
	1.6[1]	405	2.59	Died
	1.6[1]	390	2.49	Died
	1.7	250	1.7	Died
[1] M. L. D. = 1.6 = 62.5%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 3 C. Same drug as No. 3 A. "Defatted" 80 percent alcohol menstruum. Date of test, 7–6–16	0.4	205	0.32	Recovered
	0.4	240	0.38	Recovered
	0.5	250	0.5	Recovered
	0.6[1]	180	0.43	Died
	0.6[1]	230	0.55	Died
	0.8	290	0.92	Died
[1] M. L. D. = 0.6 = 166%.				
No. 3 C. Second test after 4 months. Date of test, 11–29–16	0.6	465	1.11	Recovered
	0.6	410	0.98	Recovered
	0.8[1]	335	1.07	Died
	0.8[1]	380	1.21	Died
	1.0	365	1.46	Died
	1.0	4.10	1.64	Died
[1] M. L. D. = 0.8 = 150%.				
No. 3 C. Third test after 7 months. Date of test, 2–1–17	0.6	385	0.92	Recovered
	0.6	395	0.94	Recovered
	0.7[1]	365	1.02	Died
	0.7	390	1.09	Recovered
	0.7[1]	420	1.17	Died
	0.7[1]	310	0.86	Died
	0.7[1]	365	1.02	Died
	0.8	420	1.34	Died
[1] M. L. D. = 0.7 = 143%.				
No. 4 A. Drug from McKesson & Robbins, U. S. P. VIII. Menstruum, 50 percent. Date of test, 7–13–16	0.5	290	0.58	Recovered
	0.6	205	0.49	Recovered
	0.6	190	0.45	Recovered
	0.8	230	0.73	Recovered
	1.0	285	1.14	Recovered
	1.0	190	0.76	Recovered
	1.1	240	1.05	Recovered
	1.1	240	1.05	Died
	1.1	295	1.29	Recovered
	1.1	285	1.25	Recovered
	1.2[1]	200	0.96	Died
	1.2[1]	250	1.2	Died
	1.2[1]	375	1.80	Died
	1.3	315	1.63	Died
	1.3	250	1.3	Died
	1.4	195	1.09	Died
[1] M. L. D. = 1.2 = 83.3%.				
No. 4 A. Second test after 4 months. Date of test, 11–29–16	1.0	465	1.86	Recovered
	1.1	390	1.71	Recovered
	1.2	435	2.08	Recovered
	1.2	375	1.8	Recovered
	1.3	335	1.76	Recovered
	1.4[1]	365	2.04	Died
	1.4[1]	330	1.84	Died
	1.4[1]	365	2.04	Died
	1.6	450	2.88	Died
	1.6	395	2.52	Died
[1] M. L. D. = 1.4 = 71.5%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 4 A. Third test after 7 months. Date of test, 2-1-17	1.5	340	2.04	Recovered
	1.5	435	2.61	Recovered
	1.6	350	2.24	Recovered
	1.6	355	2.27	Recovered
	1.7	325	2.21	Recovered
	1.7	325	2.21	Recovered
	1 8	350	2.52	Recovered
	1.8	420	3.02	Recovered
	1.9	250	1.9	Recovered
	2.0[1]	485	3.88	Died
	2.0[1]	440	3.52	Died
	2.2	385	3.38	Died
[1] M. L. D. = 2.0 = 50%.				
No. 4 B. Same drug as No. 4 A. "Defatted" U. S. P. VIII. Menstruum, 50 percent. Date of test, 7-13-16	0.8	270	0.86	Recovered
	0.8	245	0.78	Recovered
	1.0	230	0.92	Recovered
	1.0	285	1.14	Recovered
	1.2	215	1.03	Recovered
	1.2	230	0.92	Recovered
	1.3	210	1.09	Recovered
	1.3	285	1.48	Recovered
	1.5[1]	255	1.41	Died
	1.5[1]	250	1.5	Died
[1] M. L. D. = 1.5 = 76.8%.				
No. 4 B. Second test after 4 months. Date of test, 11-29-16	1.1	390	1.71	Recovered
	1.2	375	1.8	Recovered
	1.2	275	1.32	Recovered
	1.3[1]	345	1.79	Died
	1.3[1]	285	1.48	Died
	1.4	450	2.52	Died
[1] M. L. D. = 1.3 = 70.7%.				
No. 4 B. Third test after 7 months. Date of test, 2-17	1.0	385	1.54	Recovered
	1.1	250	1.1	Recovered
	1.2	400	1.92	Recovered
	1.2	340	1.63	Recovered
	1.3[1]	385	2.0	Died
	1.3[1]	335	1.76	Died
	1.4	425	2.38	Died
	1.4	400	2.24	Died
[1] M. L. D. = 1.3 = 70.7%.				
No. 4 C. Same drug as 4 A. "Defatted" 80 percent alcohol menstruum. Date of test, 7-13-16	0.7	310	0.86	Recovered
	0.8	235	0.75	Recovered
	0.9	295	1.0	Recovered
	0.9	270	0.97	Recovered
	1.0	235	0.94	Recovered
	1.0	225	0.90	Recovered
	1.1[1]	275	1.21	Died
	1.1[1]	175	0.77	Died
	1.2	250	1.2	Died
	1.2	340	1.63	Died
[1] M. L. D. = 1.1 = 90.9%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 4 C. Second test after 4 months. Date of test, 11-29-16	1.9	250	1.9	Recovered
	2.0	375	3.0	Recovered
	2.0	260	2.88	Recovered
	2.1	250	2.1	Recovered
	2.1	500	4.2	Recovered
	2.2[1]	250	2.2	Died
	2.2[1]	495	4.35	Died
	2.2[1]	395	3.47	Died
	2.3	250	2.3	Died
	2.3	315	2.89	Died
[1] M. L. D. = 2.2 = 45.4%.				
No. 4 C. Third test after 7 months. Date of test, 2-1-17	3.0	280	3.3	Recovered
	3.0	280	3.3	Recovered
	4.0	310	4.9	Recovered
	4.0	275	4.4	Recovered
	5.0	330	6.6	Recovered
	5.0	165	3.3	Recovered
	6.0[1]	340	8.1	Died
	6.0[1]	300	7.2	Died
	7.0	270	7.5	Died
	8.0	370	11.8	Died
[1] M. L. D. = 6.0 = 16.6%.				
No. 5 A. Drug from National Analine Co., U. S. P. VIII. Menstruum, 50 percent. Date of test, 7-13-16	0.6	285	0.68	Recovered
	0.8	230	0.73	Recovered
	1.0	215	0.86	Recovered
	1.2	235	1.12	Recovered
	1.2	365	1.17	Recovered
	1.3	225	1.17	Recovered
	1.3	250	1.3	Recovered
	1.4[1]	235	1.31	Died
	1.4[1]	260	1.45	Died
	1.5	250	1.5	Died
[1] M. L. D. = 1.4 = 71.5%.				
No. 5 A. Second test after 4 months. Date of test, 11-29-16	1.4	385	2.15	Recovered
	1.5	355	2.13	Recovered
	1.6	325	2.08	Recovered
	1.7	355	2.41	Recovered
	1.8	360	2.59	Recovered
	2.0[1]	365	2.9	Died
	2.0[1]	410	2.08	Died
	2.2	240	2.1	Died
[1] M. L. D. = 2.0 = 50.0%.				
No. 5 A. Third test after 7 months. Date of test, 2-1-17	2.5	385	3.85	Recovered
	2.5	295	2.95	Recovered
	2.7	415	4.48	Recovered
	2.7	360	3.88	Recovered
	2.9	250	2.9	Recovered
	2.9	250	2.9	Recovered
	3.0[1]	390	4.68	Died
	3.0[1]	430	5.16	Died
[1] M. L. D. = 3.0 = 33.3%.				

Sample	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 5 B. Same drug as No. 5 A. "Defatted" U. S. P. VIII. Menstruum, 50 percent. Date of test, 7–13–16	0.8	305	0.97	Recovered
	1.0	250	1.0	Recovered
	1.2	275	1.32	Recovered
	1.4	225	1.26	Recovered
	1.6	275	1.76	Recovered
	1.8	235	1.69	Recovered
	2.0	205	1.64	Recovered
	2.0	250	2.0	Recovered
	2.1	250	2.1	Recovered
	2.2[1]	265	2.33	Died
	2.2[1]	295	2.59	Died
	2.5	200	2.0	Died
[1] M. L. D. = 2.2 = 45.4%.				
No. 5 B. Second test after 4 months. Date of test, 11–29–17	3.0	305	3.66	Recovered
	3.2	335	4.28	Recovered
	3.2	440	5.63	Recovered
	3.4	250	3.4	Recovered
	3.5	320	4.48	Recovered
	3.5	415	5.81	Recovered
	3.7[1]	380	5.62	Died
	3.7[1]	250	3.7	Died
[1] M. L. D. = 3.7 = 27%.				
No. 5 B. Third test after 7 months. Date of test, 2–1–17	3.0	435	5.22	Recovered
	3.2	335	4.28	Recovered
	3.4	250	3.4	Recovered
	3.5	280	5.32	Recovered
	3.6	500	7.2	Recovered
	3.7[1]	425	6.29	Died
	3.7[1]	310	4.58	Died
	4.0	415	6.64	Died
	4.0	250	4.0	Died
	4.2	320	5.37	Died
[1] M. L. D = 3.7 = 27.0%.				
No. 5 C. Same drug as No. 5 A. "Defatted" 80 percent alcohol menstruum. Date of test, 7–13–16	0.6	285	0.68	Recovered
	0.8	195	0.62	Recovered
	1.0	415	1.66	Recovered
	1.4	410	2.29	Recovered
	1.5[1]	435	2.61	Died
	1.5[1]	340	2.04	Died
	1.6	350	2.24	Died
	1.8	285	2.05	Died
	1.8	360	2.59	Died
	2.0	400	3.2	Died
[1] M. L. D. = 1.5 = 66.6%.				
No. 5 C. Second test after 4 months. Date of test, 11–29–16	1.4	425	2.38	Recovered
	1.4	405	2.26	Recovered
	1.6	385	2.46	Recovered
	1.8	420	3.02	Recovered
	2.0[1]	375	3.0	Died
	2.0[1]	360	2.88	Died
	2.2	495	4.35	Died
	2.3	315	4.35	Died
[1] M. L. D. = 2.0 = 50%.				

Sample.	Dose per 250 Gm.	Weight of pig. Gm.	Actual dose.	Results.
No. 5 C. Third test after 7 months. Date of test, 2-1-17	1.2	335	1.6	Recovered
	1.3	210	1.09	Recovered
	1.4	270	1.5	Recovered
	1.6	300	2.3	Recovered
	1.8	405	2.91	Recovered
	2.0	350	2.8	Recovered
	2.2[1]	405	3.56	Died
	2.2[1]	465	4.13	Died
	2.3	410	3.79	Died
	2.5	345	3.45	Died
	2.7	410	4.42	Died
	2.8	395	4.42	Died

[1] M. L. D = 2.2 = 45.4%.

The summary of the results obtained from the previous experiments is given in the following tables:

SUMMARY OF RESULTS.

Sample.	1st assay.	2nd assay.	3rd assay.	Total deterioration.
No. 1 A. H. K. M. drug, U. S. P. VIII, 50% menstruum	6-28-16	11-29-16	2-1-17	6-28-16 to 2-1-17
	125%	55.5%	37.0%	68%
No. 1 B. Same drug as No. 1 A. "Defatted" U. S. P. VIII, 50% menstruum	6-28-16	11-29-16	2-1-17	6-28-16 to 2-1-17
	71.5%	62.5%	41.7%	33.8%
No. 1 C. Same drug as No. 1 A and No. 1 B. "Defatted" 80% alcohol menstruum	6-28-16	11-29-16	2-1-17	6-28-16 to 2-1-17
	125%	83.3%	76.1%	48.9%
No. 2 A. Drug from P. E. Anderson, U. S. P. VIII, 50% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	125%	71.4%	62.5%	62.5%
No. 2 B. Same drug as No. 2 A. "Defatted" U. S. P. VIII, 50% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	90.9%	71.4%	71.4%	19.5%
No. 2 C. Same drug as No. 2 A and No. 2 B. "Defatted" 80% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	200%	133%	125%	75.0%
No. 3 A. Drug from Werner & Gerathy, U. S. P. VIII, 50% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	83.3%	62.5%	62.0%	21.3%
No. 3 B. Same drug as No. 3 A. "Defatted" U. S. P. VIII, 50% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	62.5%	62.5%	62.5%	0.0%
No. 3 C. Same drug as No. 3 A and No. 3 B. "Defatted" 80% menstruum	7-6-16	11-29-16	2-1-17	7-6-16 to 2-1-17
	166%	150%	143%	23%
No. 4 A. McKesson & Robbins drug, U. S. P. VIII, 50% menstruum	7-13-16	11-29-16	2-1-17	7-13-16 to 2-1-17
	83%	71.5%	50.0%	33%
No. 4 B. Same drug as No. 4 A. "Defatted" U. S. P. VIII, 50% menstruum	7-13-16	11-29-16	2-1-17	7-13-16 to 2-1-17
	76.8%	70.7%	70.7%	6.1%
No. 4 C. Same drug as No. 4 A and No. 4 B. "Defatted" 80% alcohol menstruum	7-13-16	11-29-16	2-1-17	7-13-16 to 2-1-17
	90.9%	45.4%	16.6%	74.3%
No. 5 A. Drug from National Aniline Co., U. S. P. VIII, 50% menstruum	7-13-16	11-29-16	2-1-17	7-13-16 to 2-1-17
	71.5%	50.0%	33.3%	38.2%
No. 5 B. Same drug as No. 5 A. "Defatted" U. S. P. VIII, 50% menstruum	7-13-16	11-29-16	2-1-17	7-13-16 to 2-1-17
	45.4%	27.0%	27.0%	18.4%

SUMMARY OF RESULTS—*Continued.*

Sample.	1st assay.	2nd assay.	3rd assay.	Total deterioration.
No. 5 C. Same drug as No. 5 A and No. 5 B. "Defatted" 50% alcohol menstruum	7-13-16 66.6%	11-29-16 50%	2-1-17 45.4%	7-13-16 to 2-1-17 21.2%

It will be noted from the above results that every sample except one, *i. e.*, No. 3 B, showed marked deterioration, some samples deteriorating as much as 75 percent in seven months. These results will, therefore, tend to prove that in most cases tincture of digitalis not only deteriorates but deteriorates very rapidly.

The results also show that the "fat-free" or "defatted" tinctures of digitalis *do not* deteriorate more rapidly than the regular U. S. P. VIII tincture, as the ten "defatted" tinctures only show an average deterioration of 32 percent for the seven months' period of test, whereas the five U. S. P. VIII tinctures show a deterioration of 44.6 percent for the same period of time.

From the results of these experiments we can, therefore, draw the following conclusions:

(1) Most tinctures of digitalis deteriorate very rapidly.

(2) "Fat-free" or "defatted" tinctures of digitalis do not deteriorate at a greater rate than the U. S. P. VIII tinctures.

PHARMACODYNAMIC LABORATORY,
H. K. MULFORD COMPANY,
August 24, 1917.

AN IMPROVED LIME METHOD FOR ASSAYING OPIUM.*

BY WM. MASKE, JR.

This assay method has been the outcome of several which the writer has read and experimented with but the foundation of the assay outlined herein is a somewhat crude process by A. Guerin as given in the *Jahresberichte der Pharmazie*, Vol. 48, Page 45. As this writer collects 52 Cc. filtrate instead of the 50 Cc. as advised in this paper, and the first quantity can not readily be measured accurately, one can just as well collect 50 Cc., an amount which can be accurately measured in a volumetric flask or sucked up in a volumetric pipette, and add the correction factor, which amounts to the same thing as collecting 52 Cc. of filtrate.

The lime method of assaying opium for its morphine content is probably used more than any other method of assaying this drug. The U. S. P. uses a lime process which gives good results in the hands of experienced workers, but which for a beginner is apt to prove cumbersome. Moreover, the method takes more time and work than is necessary. The writer has successfully used the following modification of the lime method, which is simpler, less cumbersome than the U. S. P. method, and gives just as accurate results:

Method: Weigh out 7.5 Gm. of opium and dry at 60° C. Transfer the dried opium to a mortar containing 5 Gm. of fine, clean quartz sand and 3 Gm. of slaked lime. Triturate the three ingredients thoroughly until a finely divided homo-

* Read before Scientific Section A. Ph. A., Indianapolis meeting, 1917.

geneous mixture of opium is obtained. Brush the contents of the mortar on a piece of glazed paper and from there into a glass-stoppered Erlenmeyer flask of about 150 Cc. capacity. Add 75 Cc. of distilled water and shake vigorously for fifteen minutes, and then every ten minutes during three hours (or continuously in a mechanical shaker). Filter off 50 Cc. of the solution into a 50 Cc. volumetric flask. This represents approximately 5 Gm. of opium.

Transfer the whole of the filtrate to a separator, washing the flask with a small portion of distilled water. Add 15 Cc. of ether and shake thoroughly. Now add 1 Gm. of ammonium chloride and shake frequently for half an hour; then set it aside in a cool place overnight. Plug the stem of the separator fairly tight with a pledget of purified cotton and allow the liquid to drain off. Wash the funnel and its contents with morphinated water until the drippings are colorless, then wash with two small portions of distilled water to replace the morphinated water. Dislodge the cotton plug in the separator stem by blowing vigorously into the top of the separatory funnel and catch it in a clean Erlenmeyer flask.

Close the stop-cock and add 25 Cc. of tenth-normal sulphuric acid, V. S., replace the stopper and agitate until the crystals in the separator are dissolved. Then dissolve the crystals in the stem of the separator by holding the funnel at an angle, allowing the acid to run out slowly into the Erlenmeyer flask and at the same time rotating the separator. Wash the separator with three 10 Cc. portions of distilled water; also wash the stem of the separator, adding all of these washings to the contents of the Erlenmeyer flask. Agitate the flask until any remaining crystals are dissolved and titrate the excess of acid with fiftieth-normal potassium hydroxide, V. S. Make a correction by adding to the actual number of Cc. of acid consumed one twenty-fifth of this amount. Each mil of tenth-normal sulphuric acid, V. S., consumed corresponds to 0.028516 Gm. of anhydrous morphine.

UNIVERSITY OF WASHINGTON,
COLLEGE OF PHARMACY.

TOLU AND SUGAR COATING IN THE DISGUISING OF MEDICINES.

BY BERNARD FANTUS, M.D.

The disguising of disagreeable medicines is, in general, a problem of sneaking the agent past the guardianship of the palate, without changing the substance to such an extent as to impair its medicinal activity. One means of doing this is by some coating insoluble in the saliva but soluble in some of the other digestive juices. Capsules and pills solve this problem for the adult. For children, the problem of coating of medicines is thus far unsolved.

For quite a time I have worked upon the coating of tiny granules of medicament with insoluble material: Have tried cacao butter, paraffin of low melting point dissolved in ether, liquid petrolatum, and, though each of these did something in the direction of subduing tastes, none of them was satisfactory. Of late, I experimented with resins, such as mastic and tolu, and believe I have found in the latter an agent that meets the requirements. Mastic does not seem to be more efficient than tolu, and is much inferior to it in flavor.

My aim is to coat each particle of the medicament with a thin layer of resin and then with sugar, which I believe can be accomplished in the following manner: The coarsely powdered (No. 40) or granular drug is stirred up with a suitable amount of a 1 or 2 percent alcoholic solution of tolu. It is then immediately thrown upon powdered sugar on a coarse mesh sieve, say a No. 20 sieve. As the resin-impregnated material is being rubbed through the sieve, it is at one and the same time converted into granules and coated with sugar. By repeating the sifting several times, and then mixing the granules gently and without trituration, a considerable degree of lessening of the taste of substances suitable for this process can be obtained.

It is of advantage to add saccharin to the tolu solution. For, whenever substances of unequal degree of solubility pass through the mouth, the least soluble material is the one that is tasted most, because it is tasted last, and its taste lingers as long as there is a particle of the substance left in the mouth or pharynx. This lingering taste is best subdued by saccharin.

I therefore use the following solution for the saturating of the medicinal powder of granules:

SACCHARINATED SOLUTION OF TOLU.

Tolu	2.0
Saccharin	2.0
Alcohol	100.0

TOLU-COATED CALCIUM SALICYLATE.

The problem of the administration of salicylate in "candy form" was not solved in a perfectly satisfactory manner in my previous publications on "Candy Medication."[1] In the series of salicylates studied, *salophen* (acetylaminosalol) gave the best results, both as far as palatability and clinical usefulness were concerned. Of this substance, 0.06 Gm. (1 grain) can be readily administered in a 0.30 Gm. (5 grain) tablet. *Saloquinine*, of which 0.06 Gm. (1 grain) may also be administered in this form, is somewhat less satisfactory, as far as taste is concerned. There are, however, occasions when it may be undesirable to administer the other agent with which the salicylate is combined in the substance mentioned: the quinine in the case of saloquinine, the phenacetin in the case of salophen. Furthermore, salophen has of late been unobtainable in the market, owing to the European war.

Aspirin (acetylsalicylic acid) is so difficult to disguise that not more than 0.015 Gm. (1/4 grain) can be given in a 0.30 Gm. (5 grain) tablet; and even then the preparation is by no means perfect. *Novaspirin* (methylene-citrylsalicylic acid) is much better from the standpoint of disguising, 0.015 Gm. (1/4 grain) producing practically perfect tablets. Even 0.03 Gm. (1/2 grain) may be given in this form. However, the dose is still rather small. Of *magnesium salicylate*, not more than 0.03 Gm. (1/2 grain) can be given in this form; and even this dose does not make a perfect preparation.

As only perfectly delicious sweet tablets should be used as "candy medica-

[1] "Candy Medication," C. V. Mosby Company, St. Louis. "Candy Medication," *Journ. A. M. A.*, Jan. 1, 1916, LXVI, pp. 25–28.

tion," it is desirable that aspirin and magnesium salicylate be deleted from the "candy materia medica." This can be done all the more readily as we now have in sweet tablets of tolu-coated calcium salicylate, prepared according to the following formula, a satisfactory administration form of salicylate.

SWEET TABLETS OF CALCIUM SALICYLATE.

0.06 Gm. (1 grain).

Calcium Salicylate (granular)	6.00 Gm.
Saccharinated Solution of Tolu	3.00 mils
White Fat Sugar[2]	24.00 Gm.

Pour the tolu solution over the calcium salicylate. Stir without pressure, until the granules have been thoroughly moistened with the fluid. Place the white fat sugar upon a No. 20 sieve. Now add the tolu-coated calcium salicylate to the sugar and pass it through the sieve repeatedly, so as to sugar-coat the granules of calcium salicylate as well as to secure thorough admixture. Compress in a tablet machine, using $^3/_8$ inch die and punches to make one hundred 0.30 Gm. tablets.

Without the tolu and sugar coating, as described in the above process, calcium salicylate is no better than magnesium salicylate for administration in this form. However, owing to its comparative insolubility in alcohol, it lends itself well to tolu coating. That these tablets liberate the salicylate ion can be readily demonstrated by taking a few of them, whereupon the urine will give the characteristic reaction with ferric chloride within two hours.

Inasmuch as tolu and sugar coating promised to be of help in the administration of other medicaments, further experiments were undertaken with this process. It was soon found that, to be suitable for this purpose, the agent must be sparingly soluble in alcohol and in water. Sodium bromide, for instance, does not lend itself to this method of disguising. On the other hand, there is a host of vegetable powders that may well be disguised by this method.

TOLU-COATED SENNA.

Physic is still the most important agent in the armamentarium of the physician. Phenolphthalein and calomel have thus far been the best cathartics from the standpoint of tastelessness; elaterin, podophyllin and jalap, though easily disguised, being too drastic. Calomel can, of course, not be used frequently; and phenolphthalein is a substance that patients readily become habituated to, so that the dose must be increased from time to time. The senna tablets, containing 0.06 Gm. (1 grain), the formula for which had been previously devised,

[2] *White Fat Sugar* is prepared as follows:

Spirit of Peppermint	2.00 mils
Fat Starch*	20.00 Gm.
Sugar, Powdered	80.00 Gm.

To the powdered sugar add the fat starch and the spirit of peppermint. Mix and preserve in a well-stoppered bottle in a dark place.

* *Fat Starch* has the following composition:

Alcoholic Solution of Saccharin, 3%	15.00 mils
Liquid Petrolatum	25.00 Gm.
Starch	75.00 Gm.

Mix the starch with the solution of saccharin, and permit the alcohol to evaporate completely. Then incorporate the liquid petrolatum.

were not absolutely perfect. By means of tolu-coating a perfect tablet can be obtained, as the result of the following formula:

SWEET TABLETS OF SENNA (IMPROVED FORMULA).

0.06 Gm. (1 grain).

Senna, No. 40 Powder	6.00 Gm.
Saccharinated Solution of Tolu	6.00 mils
Red Fat Sugar[3]	24.00 Gm.

Doubt might be entertained regarding the efficiency of the tolu-coated drug. I therefore experimented upon myself, and found that 0.50 Gm. of senna in form of these tablets gave me violent purgation within eight hours. Even 0.30 Gm. of senna in form of these tablets proved unpleasantly strong in purgative effect after ten hours. I must confess than I am rather sensitive to cathartics. However, there is no doubt in my mind that these tablets are an efficient physic.

TOLU-COATED IPECAC.

In view of the importance of ipecac as an emetic and expectorant, I did considerable experimenting with it; but was unable to subdue its taste sufficiently to administer useful doses of it in perfectly pleasant form. Tolu-coating, as proposed, solves the problem of the administration of ipecac in "candy form." As much as 0.03 Gm. of powdered ipecac can be given, which is practically equal in strength to $^1/_2$ mil of syrup of ipecac, so that two of these tablets would represent the average expectorant dose for adults. A few of these tablets ought to be sufficient to produce vomiting in a child. I felt distinctly nauseated an hour after taking five of them.

The following formula for 0.03 Gm. ($^1/_2$ grain) ipecac tablets might, therefore, be considered emetic for children, expectorant for adults. Tablets of $^1/_{10}$ the strength would give a sufficient dose for expectorant action in children, 3 years of age.

SWEET TABLETS OF IPECAC.

0.03 Gm. ($^1/_2$ grain).

Ipecac, No. 40 Powder	3.00 Gm.
Saccharinated Solution of Tolu	3.00 mils
Cacao Sugar.[4]	27.00 Gm.

Process of preparation same as specified in first formula.

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[3] *Red Fat Sugar* is prepared as follows:

Solution of Carmine, N. F	6.00 mils
Spirit of Cinnamon, 10 percent	1.00 mils
Fat Starch	20.00 Gm.
Sugar, Powdered	80.00 Gm.

Mix the carmine solution with the sugar and permit the powder to dry. Then add the spirit of cinnamon. Preserve in well-stoppered bottle in a dark place.

[4] *Cacao Sugar:*

Spirit of Cinnamon, 10 percent	0.50 mil
Cacao Powder	10.00 Gm.
Dextrose	10.00 Gm.
Sugar, Powdered	80.00 Gm.

Mix thoroughly by trituration in a mortar, and preserve in a well-stoppered bottle.

To ascertain the relative effects of tolu-coated ipecac and of the drug without coating, one dog was given by stomach tube 0.2 Gm. of ipecac No. 40 powder per Kg. Another dog was given the same relative amount of the same drug, previously coated with tolu and sugar, as described above. Care was taken to permit the tolu-coating to dry before administration. In both cases the drug was mixed with 50 mils of water and injected into the stomach through the stomach tube by means of a large syringe. The results are shown in Table I, from which

TABLE I.

COMPARISON OF EFFECTS OF IPECAC AND TOLU-COATED IPECAC UPON DOGS WITH EMPTY STOMACH. STOMACH TUBE ADMINISTRATION.

Time																		
Hour	10:	10:	10:	11:	11:	11:	11:	12:	12:	12:	12:	1:	1:	1:	1:	2:	2:	2:	2:
Minutes	15	30	45		15	30	45		15	30	45		15	30	45		15	30	45
Dog 1 *Dose* Ipecac 0.2 × Kg.						X	X	X	X	X	X	X	XX	X	X		b. m.		
Dog 2. *Dose* Tolu ipecac 0.2 × Kg.									X			b. m.		X			b. m.	X	

X means emesis; b. m., bowel movement.

It will be seen that the effect of tolu-coated ipecac sets in a little later and is milder.

it is evident that some of the emetic action of ipecac is still obtainable from the tolu-coated drug. The action is merely delayed and milder. That drying of the tolu-coating is necessary for reliable results was shown by another experiment in which such care was not exercised, and which resulted in the dog that obtained the tolu-coated drug, vomiting 15 minutes after the administration, while the control animal did not vomit until 48 minutes had elapsed. The emesis was equally frequent in both doses, both dogs vomiting about seven times within the next few hours.

TOLU- AND SUGAR-COATED DIGITALIS.

In view of the importance of digitalis as a medicament, experiments were next undertaken to determine the suitability of this substance and it can be positively asserted that tolu-coating gives a much better product than the form previously developed.

SWEET TABLETS OF DIGITALIS.

(Improved formula.)

0.008 Gm. (1/8 grain).

Digitalis, 40 Powder	0.80 Gm.
Saccharinated Solution of Tolu	1.60 mils
Cacao Sugar[5]	29.20 Gm.

Preparation same as before described.

Twice the dose, that is, 0.016 Gm. (1/4 grain) and even more could be administered in perfectly delicious form by means of this process.

Of course, the most important question is whether the tolu-coated digitalis does or does not have the same action as the native drug; for activity is of much greater importance than palatability. A study was therefore undertaken to compare the toxicity of the two forms of digitalis. At first, an attempt was made to

[5] Formula in footnote on previous page.

use rabbits for this purpose. It was found almost impossible to kill rabbits with digitalis. As much as 4 Gm. per Kg. did not have uniform effects, some animals surviving and some dying a few days later. The administration of digitalis to dogs leads to vomiting. It therefore became necessary to administer morphine previously, to prevent the emesis. In the experiments about to be reported, 4 Mg. of morphine sulphate per Kg. were given hypodermically one hour before administration of the dose. During this time, the dogs vomited and purged freely. They were then given, by means of the stomach tube, the tolu- and sugar-coated digitalis prepared according to the formula given and permitted to dry, while control dogs were given equivalent doses of the same drug in its native form.

The results are shown in Table II, from which it is evident that tolu-coating does not greatly lessen the toxicity of digitalis to dogs.

TABLE II.

COMPARISON OF EFFECT OF DIGITALIS WITH TOLU-COATED DIGITALIS ADMINISTERED TO MORPHINIZED DOGS BY MEANS OF STOMACH TUBE.

Dog.	Weight, Kg.	Dose per Kg.	Total dose.	Lived.	Necropsy.
		Tolu Digitalis.			
1.	8.70	2 Gm.	17.4	1 day	Much digitalis in stomach. Submucous hemorrhages in stomach. Urine contains albumin
2.	10.00	1.5	15.00	1 day	Much digitalis in stomach. Some gastric irritation
3.	7.00	1.0	7.00	Lived	
4.	6.00	1.0	6.00	2 days	Stomach almost empty. No albumin in urine
5.	5.00	1.0	5.00	1 day	Much digitalis in stomach. Upper part of intestine hemorrhagic in spots
6.	3.60	1.0	3.60	2 days	No necropsy performed
7.	5.9	1.0	5.9	1 day	Stomach contains moderate amount of digitalis. No albumin in urine
		Digitalis.			
10.	6.50	2 Gm.	13.00	1 day	No necropsy performed
11.	8.00	1 Gm.	8.00	1 day	No necropsy performed
12.	8.60	1 Gm.	8.60	2 days	No necropsy performed
16.	11.40	1 Gm.	11.40	1 day	No necropsy performed
13.	10.00	0.5 Gm.	5.00	1 day	Much digitalis in inflamed stomach
14.	9.50	0.5 Gm.	4.75	Lived	
15.	10.00	0.25 Gm.	2.50	Lived	

SUMMARY OF ABOVE DETAILED EXPERIMENTS.

	Tolu-Coated Digitalis.		Digitalis.	
Dose per Kg.	No. of experiments.	Result.	No. of experiments.	Result.
2 Gm.	1	Died	1	Died
1.5 Gm.	1	Died		
1 Gm.	5	4 died	3	All died
0.5 Gm.			2	1 died
0.25 Gm.			1	Recovered

It will be seen that there is not much difference in the toxicity of digitalis and of tolu-coated digitalis.

It is interesting to note, in this connection, that morphinized dogs dying within 24 hours of the administration of the poison still hold a large amount of digitalis in their stomach, while dogs dying within 2 days had an almost empty stomach. Inasmuch as the death, in either case, was due to the digitalis, one is led to suspect that the gastric juice is capable of extracting the active principles even from tolu-coated digitalis. It seems fair to infer that tolu-coated digitalis will exert its action in the human being.

CONCLUSIONS.

1. Tolu and sugar coating of granulated medicaments of slight degree of solubility in alcohol and water is distinctly advantageous from the standpoint of disguising.

2. This coating does not interfere with the activity of digitalis, senna and of calcium salicylate. It may lessen somewhat the effect of ipecac upon the stomach.

3. Tolu and sugar coating can easily be carried out by any pharmacist, provided with a set of sieves.

4. The medication, thus disguised, might be administered in the form of powder or preferably in form of compressed tablets.

LABORATORY OF PHARMACOLOGY,
UNIVERSITY OF ILLINOIS,
COLLEGE OF MEDICINE.

SOME COLOR CHANGES IN SOLUTIONS CONTAINING FERRIC CITRO-CHLORIDE.*

BY WILLIAM R. WHITE.

In making a stock solution of ferric citro-chloride, the same strength as the Tincture Ferric Citro-Chloride, N. F., for use in making elixirs, I have frequently noticed a difference in the shade of the green color produced. Seeking to obtain the same shade each time, I proceeded along the lines suggested by Prof. Otto Raubenheimer in his article published in the JOURNAL OF THE A. PH. A., Vol. IV, p. 351. By adding sodium bicarbonate I succeeded in getting the desired apple-green color. The process was tedious and the effervescence annoying, and induced me to make other experiments.

I soon found that not only would alkali carbonates and bicarbonates change the color of the solution from an olive-green to an apple-green but also that the alkali hydroxides would produce the same results; an excess, however, destroys the green color, which changes to a reddish brown.

I next tried the effect of the mineral acids, hydrochloric, sulphuric and nitric, and found that when they were added in excess to a green solution, the green color was entirely destroyed and like with the excessive addition of alkali a reddish brown color produced. Also if the acid is added gradually to a reddish brown solution, produced by the addition of excess alkali, the solution again assumes a green color; continued addition of acid causes the green color to disappear and the solution again becomes reddish brown. By adding alkali to a reddish brown solution, due to excess of acid, the green color is again developed and gives place to the reddish brown color when the alkali is in excess.

These experiments proved that the green color does not persist in a ferric citro-chloride solution unless the acidity or alkalinity is within certain degrees

* Read before Scientific Section, A. Ph. A., Indianapolis meeting.

of limitation. In order to determine the limits of the green zone, 5 mils of the N. F. tincture of ferric citro-chloride were titrated with half-normal V. S. hydrochloric acid and it was found that 8.5 mils of the latter would destroy the green color, and to 5 mils of the same tincture 61.8 mils $\frac{N}{10}$ NaOH V. S. were added to obtain the same yellowish tint with both solutions being made up to the same volume with distilled water. One hundred mils of tincture of citro-chloride of iron then would require 85 mils $\frac{N}{1}$ HCl V. S., and 123.6 mils $\frac{N}{1}$ NaOH V. S.; the end-point, however, was not very sharp and these figures may be considered as approximate.

Having learned from these investigations how to get the desired shade, I then began a series of experiments to find out why the green color of solutions, containing iron citro-chloride, would turn darker when exposed to light. On May 21, 1917, I made up a solution containing 10 percent of a solution of ferric citro-chloride, of same strength as the N. F. tincture and 90 percent of distilled water. To one and one-half ounces I added 10 grains of boric acid; to a like quantity 10 grains of reduced iron; to four ounces 5 grains of potassium chlorate; to three and one-half ounces $^1/_2$ ounce of syrup. The bottles containing these solutions were placed in a window and exposed to sunlight. To these a bottle with one and one-half ounces of the original 10 percent solution was added, and another like quantity was placed in a box, protecting the solution from the light.

After three days each of the solutions exposed to light liberated carbon dioxide, indicated by tests with solution of lead subacetate and solution of calcium hydroxide; the one with reduced iron had become decolorized, but turned yellow when exposed to the air, which indicated a case of reduction and oxidation.

After three months all of the solutions exposed to light had assumed a reddish brown color except the one with reduced iron and this varied from colorless to brown, always turning darker when the stopper was removed and the solution exposed to the air. The sample not exposed to the light retained its green color with no apparent change.

The discovery of the development of carbon dioxide is in accordance with the work done by W. L. Scoville (JOURNAL A. PH. A., Vol. IV, p. 590), who showed its presence in wine of beef and iron, made with ferric citro-chloride, and he claimed that it was produced by the ferric salt oxidizing the citric acid. J. J. Willaman, in an article entitled "A Modification of the Pratt Method for Determination of Citric Acid" (*J. Am. Chem. Soc.*, Vol. 38, p. 2193), demonstrated that citric acid can be determined quantitatively by the fact that it forms acetone when oxidized by potassium permanganate. Believing that the citric acid is oxidized by the ferric iron and thinking that perhaps acetone might be formed in the solutions under consideration, a test was made which proved its presence.

An effort was then made to discover what would restore the green color to solutions of ferric citro-chloride which had turned brown by the action of sunlight. It was found that the addition of the mineral acids named would lighten the solutions materially, and in those which had only turned a reddish brown, the green color would be partially restored.

Citric acid was added and produced the same results in restoring the green

color and it was found that an excess of it would not cause the reddish brown color produced by excess of the mineral acids, therefore citric acid seems best suited for restoring the green color. However, when citric acid was added to an elixir of calisaya and iron, made about a year previous that had turned black, the citric acid alone failed to restore the color, but with the further addition of reduced iron the solution was restored to a light yellow color.

It was found that the green solutions responded to the test for ferric iron, while those of a reddish brown color to a ferrous condition.

SUMMARY.

The following conclusions have been reached:

1. That acids and alkalies beyond certain limits will destroy the green color of solutions of ferric citro-chloride, and these limits have been approximately determined.

2. That in solutions of ferric citro-chloride, exposed to sunlight, the citric acid is decomposed with the formation of carbon dioxide and acetone, and it is probable that the sodium liberated combines with the chlorine, lessening the acidity; the restoration of the color by the addition of acids indicates this.

3. That the iron exists in the green compounds in the ferric state and is reduced to the ferrous in the reddish brown and colorless solutions.

4. That citric acid can be used to lighten solutions and elixirs when of a reddish brown color, but that citric acid and reduced iron should be used together when these preparations have turned black.

5. That the green color is more than likely the result of a new compound of sodium citro-chloride and that the excess of acids destroys this. An excess of alkali in all probability causes the formation of ferric hydroxide, producing a reddish brown color.

The work done so far on this paper is presented in the hope that it will stimulate further investigation of this important subject.

Samples of the various products were shown.

ABSTRACT OF DISCUSSION.

W. L. SCOVILLE: This work of Mr. White is very interesting and practical; we need more of that kind on the iron preparations. This whole question of the physical chemical qualities of iron has got to be worked out from the bottom up. Prof. Stevens started an investigation some years ago, but he did not have time to finish it. We must consider that iron has an acidic as well as a basic character. We have a class of compounds known as the ferrates. Now there seems to be a condition in which the iron takes on the acidic character, and in which it is very sensitive to chemical change, not so much in itself, but in the agents with which it is combined. This action on the citric acid is simply an evidence that the iron is probably active in its acidic character.

I hope some day the universities will take up the whole question of the physical properties of iron, and give us the fundamental principles under which these color changes, as well as other changes, in the iron actually take place.

C. P. WIMMER: I might add that the problem, to my mind, is more of a color chemical problem all the way through, because I believe, for example, that this solution of iron citro-chloride is a colored solution and when the iron chloride is dialyzed out citric acid will be left. I want to substantiate what Prof. Scoville has said, that this aspect of the iron salts presents untold possibilities for research. I have done some work on it, and I hope by another year I will be far enough advanced to make a report on it.

PRACTICAL PHARMACY SECTION

THE CARREL-DAKIN SOLUTION PHARMACEUTICALLY AND PHYSIOLOGICALLY CONSIDERED.*

BY ST. CLAIRE RANSFORD-GAY.

There has been no preparation of recent years, excepting, perhaps Normal Saline, which in effectiveness and simplicity has equaled the Carrel-Dakin solution, and in conceding that it is a most wonderful and practical application of scientific phenomena, we simply prove that it is not necessary, nor is it expedient, to tamper with the laboratory of nature, in order to obtain perfect products for the restoration of body balance. Therefore, synthetic products, while perhaps identically the same in formula but reinforced through the benzole ring, not being natural, do not contain the same amount of energy that is found in the natural product, hence disease will respond, if at all to these latter compounds, only in proportion to the amount of their potential force, which through the agency of the body is convertible to kinetic energy. This is the reason that synthetic preparations for instantaneous use, now marketed in such great profusion, have failed to give satisfactory results, in the hands of experienced practitioners, and, moreover, have seriously interfered with the use of the original solution.

A word as to the best method of manufacture and keeping yet found by us, and some hints from practical experience with a product that corresponds with all of the requirements set down by Dr. Carrel may be an aid to those who for themselves have not had an opportunity to do any special work along this line, and, as well, will serve as an excuse for the reason why this solution should be regarded as purely individual in its curative factors, and general only inasmuch as it contains all the materials for promoting healthy granulation, but the use of the solution must be modified to suit the condition to be treated.

The following formula, with which we obtained the best results, does not appear to be balanced, but a little pharmaceutical arithmetic will show that when U. S. P. salts are used the resulting solution will contain 0.5 percent of sodium hypochlorite, with small amounts of neutral sodium salts:

Chlorinated Lime[1]	200 Gm.
Sodium Carbonate (Dried)	100 Gm.
Sodium Bicarbonate	50 Gm.
Distilled Water	10,000 mils

When made on a large scale, say 25 to 50 gallons, it is very easy to siphon off the supernatant liquid, and filter it, so as to obtain a clear solution, but the manufacture of small quantities is troublesome. It must be understood, too, that the process is not merely one of adding the salts to the water, making the solutions and immediately pouring one into the other, thus obtaining in say an hour, a product

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., Indianapolis, meeting, 1917.

[1] Based on strength of 25 percent chlorine determined by titration; a corresponding amount must be used if the chlorinated lime is not of this strength.

fit for use. No indeed, nature takes just so long to act, and in hastening her action, we are depriving the finished product of just so much energy, and that will be manifested in the finished product, when titrated. The following technic and method of keeping, if carefully followed, will give a product which will obviate the necessity of making the solution fresh every three days and thus lower the cost to those who are unable to pay for the extra labor and great waste of material thus entailed. It is the high cost of this solution to those of limited means that keeps many physicians from using the solution even when the necessity is very great. The chlorinated lime U. S. P. should be put into a large bottle, and half of the water added. This is well stirred during six hours, and allowed to stand over night. The sodium salts are dissolved separately, each in a quarter of the remaining water, and allowed to stand over night. In the morning the sodium bicarbonate solution and the precipitate are poured into the chlorinated lime, and the whole well shaken. The sodium carbonate solution and precipitate are then added quickly so as to absorb readily the nascent chlorine which has been previously liberated by the sodium bicarbonate. (We have found that because of its greater solubility in cold water, the lime should be treated with water at a temperature of from 55 to 60° F., and kept at that temperature until the sodium salts are added, they too being in as cold a solution as possible.)

The mixture is now well stoppered, shaken thoroughly for ten minutes, and then allowed to settle. The supernatant liquid is siphoned off, and though filtered through paper, the stem of the funnel is well packed with asbestos, because the quality of the filter paper on the market at the present time leaves much to be desired as far as strength is concerned. The finished product is a clear liquid, with a marked odor of chlorine, which when titrated according to this method, contains 0.5 percent sodium hypochlorite.

"Put 20 mils of solution in a glass, and pour on the surface a little, say 2 cgm., of phenolphthalein powder, and shake with a circular motion, as in rinsing. The liquid should remain colorless, a red discoloration indicating free alkali or too little carbonation which must be corrected before titration."

"Titration: To 10 mils of the solution add 10 mils of distilled water, 2 Gm. of potassium iodide, and 2 mils of acetic acid. Pour into this mixture a $\frac{N}{10}$ (2.48 percent) solution of sodium hyposulphite, until it is decolorized. The number of mils of hyposulphite solution, multiplied by 0.3725, equals the percentage of sodium hypochlorite in the solution." This method is very simple and accurate.

All the technic, however, is not confined to the manufacture, which, as previously stated, should be carried out at as low a temperature as possible, and with as little light (natural or artificial) as convenient. After the solution has been filtered, it should be put up in well corked bottles and kept in the ice-box away from light. In this way it is possible to keep the solution for several weeks without deterioration, but in spite of the fact that these are ideal keeping conditions we titrate it each time before dispensing. The patient and doctor should be advised to observe this method of keeping the solution.

When the solution has turned lavender, it is no longer fit for use. In spite of the fact that every precaution has been exercised in the technic, the doctor sometimes fails to obtain his results, and despite argument on the part of the pharmacist,

he is convinced that it is the fault of the solution. It may be well then, to bear, in mind the following: This solution without dilution, is admirably suited to what may be termed the gross wounds of the battlefield, for two reasons: first, the men sustaining the wounds have gone into battle in perfect physical condition and are really physically "fit" and the infection being recent and local, the system is depleted only from shock and a normal loss of blood because under these conditions clotting must occur in the normal time. Therefore a great deal of the energy of the solution is used up in the removal of all effete material, and the remaining energy of the sodium hypochlorite serves to disinfect the wound, and to promote healthy granulation of the wounded area. If you will notice Dr. Carrel's method of using the solution, you will see that after the granulations have arrived at a certain point, the irrigating then proceeds only at intervals, and the strength is accordingly decreased.

Take, however, the typical hospital case, first of all, only a very few of the ward cases enter the hospital in good condition. Then if the patient has a septic condition warranting operation, the chances are ten to one that it has passed the local stage. Therefore, a solution containing 0.5 percent sodium hypochlorite will not be isotonic with her blood serum, as she will already have more sodium than she can take care of, due to the infection, and an additional amount in the solution will do more harm than good. It is well, therefore, to begin operations with a dilute solution, and to increase the strength if necessary, and we have found that in the irrigation of a kidney, the bladder or the vagina that the solution should be diluted from one-half to one-third. If, therefore, the strength of the solution is adapted to the individual case, even the most inexpert practitioner will be able to obtain results, provided that he supplements his treatment with the other salts required for the maintenance of and the restoration of the body balance which has been so disturbed by the septic condition that an andemia or worse may be the result if great care is not used in the after-treatment of the surgical condition.

UNITED STATES PUBLIC HEALTH SERVICE.

List of changes of duties and stations of commissioned and other officers of the United States Public Health Service for the seven days ended February 13, 1918.

Pharmacist J. A. Wolfe. Return to station, Philadelphia, Pennsylvania. Feb. 12, 1918.

Sanitary Engineer C. N. Harrub. Proceed to Augusta, Ga., on special temporary duty. Feb. 8, 1918.

Sanitary Engineer H. W. Van Hovenberg. Proceed to New Orleans, La., for duty in malaria investigations. Feb. 6, 1918.

Sanitary Bacteriologist E. M. Meyer. Proceed to Berea, Kentucky, for duty in investigations of meningitis. Feb. 4, 1918.

Sanitary Inspector Virgil H. Robinson. Relieved at Tacoma, Washington. Proceed to Seattle, Washington. Feb. 8, 1918.

Pharmacist J. M. Bell. Relieved at the Savannah Quarantine Station. Proceed to Norfolk, Va. Jan. 30, 1918.

Sanitary Engr. J. A. A. Le Prince. Report at Bureau for Conference relative to malaria. Jan. 30, 1918.

Sanitary Bacteriologist C. F. Butterfield. Relieved at Manhattan, Kansas. Proceed to Columbia, S. C., on special temporary duty. Feb. 2, 1918.

Special Expert W. C. Purdy. Proceed to New Orleans, La., for training in laboratory procedures relating to malaria. Feb. 1, 1918.

PROMOTIONS.

Pharmacist Cletus O. Sterns. Promoted and appointed a Pharmacist of the first-class, effective November 5, 1917. Pharmacist Walter H. Keen, promoted and appointed Pharmacist of the first class, effective December 31, 1917. Jan. 23, 1918.

COMMERCIAL SECTION

A MOVING WINDOW DISPLAY.*

(A Demonstration.)

BY OTTO RAUBENHEIMER.

This is not a paper but merely a demonstration. Like many discoveries, mine was brought about quite accidentally by being one of the few pharmacists in the United States who make their own milk of magnesia, which can be prepared for thirty cents a gallon, instead of thirty-five cents per 12-ounce bottle.[1] In the process, I used a syphon to remove the wash water. On one occasion the rubber tubing contained a little pin-hole. To my great surprise this little leak produced a peculiar phenomenon, *viz.*, air bubbles formed and were drawn down with the water, thereby producing a very striking effect.

This gave me an idea. I concluded to use this arrangement for a window display. In the rubber part of the original syphon, the little pin-hole got gradually larger and larger, until there was more air than water, and consequently the flow stopped. So I had to give the display up temporarily. I wondered how I could contrive to continue it, as it had proved quite an attraction. I found a way, and I have come here to show you just how it was done. The display was in my window for eighteen years and many people saw it. As the life of a patent is only seventeen years, I feel that I have kept the idea to myself long enough, and I am willing to part with it now for the benefit of the A. Ph. A. members, attending the Commercial Section at the Atlantic City Convention.

I have received inquiries about it from all over the United States. People wrote to me and asked me how it was done, and I told them that if they would come to Brooklyn I would show them.

All that it is necessary to use is a glass "Y" tube, which can be bought for about fifteen cents. On one of the upper ends of the "Y" tube I attach a short rubber hose, on which there is a metal screw compressor. This I can regulate by tightening it or gradually loosening it. This screw compressor costs twenty-five cents. The other upper end of the "Y" tube is connected with a piece of glass tubing which acts as the short leg of the syphon, namely, the one which sucks up the water. The lower end of the "Y" tube is connected with a long glass tube, the long leg of the syphon, which is the water outlet. I had glass tubing going all over the window, but I could not bring it all. I merely brought a few pieces of tubing to demonstrate the way the apparatus works. The more glass tubing you have the more of an attraction the display will be. I ran the tubing over signs in the window, and also connected it with a Liebig condenser, used to demonstrate the distillation process.

I will now explain how I made the action continuous. To connect the pieces of glass tubing, I use rubber tubing. At the outlet I attach another screw com-

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* Delivered before Section on Commercial Interests, Atlantic City meeting.

[1] Proceedings A. Ph. A., Vol 55 (1907), p. 150.

pressor to regulate the flow. The syphon is best started without admitting any air. The way it is regulated now, there is but very little air admitted. It shows up better when the liquid is not clear like water, but colored. By slightly opening the screw compressor on top, you will see that a little air enters and comes through along with the water, thereby forming air bubbles. The size of these can be regulated by admitting a little more or a little less air. In the same way, the outflow can be regulated by the screw compressor, so as to make the water and air run through more slowly or faster. The larger and long air bubbles with their convex ends very closely resemble hard gelatin capsules.

The display in my window frequently attracted so many people that the police had to come and drive them away. They were all guessing what made it go. I had the "Y" tube high up in the window, so that it was concealed. When the water reservoir on top got empty, I would, of course, have to fill it again. Not wanting to be bothered with that, I connected it with a running stream of water by means of the faucet, which I turned so that the water would run in just as fast as it ran out. After that, I usually did not have to bother with it from the time I turned it on in the morning until night. I fixed it so that the bottle, which acted as the water reservoir, was about half full all the time. Of course, I had to keep my eye on it, as the water pressure sometimes varies.

I hope that this demonstration of a "Moving Window Display" will convince the members of the A. Ph. A. that even a little knowledge of physics and chemistry can be utilized to convince the public that your pharmacy is different from your neighbor's, who displays patent medicines, suspensories, dolls, or still worse, "apples."

ABSTRACT OF DISCUSSION.

J. B. THOMAS: The manufacturers of soda drinks are using the same idea. Two colored men were standing before the window in which this was shown in connection with the soda water, and wondering at the mysterious disappearance of the water, one said, "Say, John, where do you suppose that is coming from?" The other replied, "It is not so important where it is coming from as where it is going to."

R. S. LEHMAN: This idea is being used for advertising purposes in the shape of a glass sign. There is one now in New York, which has been there quite a long time. There are letters, forming the words "Havana Cigars," which run in a continuous glass tube. The end of the word "Havana" joins the end of the word "Cigars." There is always a little globule of air around the letter.

CHARLES H. LAWALL: I am wondering whether Dr. Raubenheimer ever had the experience of trying to syphon a liquid of lower density through one of higher. In a laboratory where I was once employed, we often had occasion to syphon liquids, and it was customary to fill the syphon with water before starting, and then immerse the syphon in the liquid to obtain the flow. On one occasion, chloroform was the liquid to be syphoned. The operator filled the syphon with water and immersed it in the chloroform. The chloroform came up to the top of the bend, but did not displace the water, but bubbles of chloroform went down through the water, just as the bubbles of air in the syphon of Dr. Raubenheimer.

OTTO RAUBENHEIMER: That is a new experience; of course, air is a good deal cheaper than chloroform.

SECTION ON EDUCATION AND LEGISLATION

ARE COLLEGES OF PHARMACY DEVOTING SUFFICIENT TIME TO DISPENSING?*

BY ARTHUR W. LINTON.

The Pharmaceutical Syllabus defines Dispensing Pharmacy as "the extempore preparation or compounding of medicine." The Syllabus states that "the minimum time devoted to this subject shall be sixty hours, which should be arranged to give a liberal number of hours for actual work in the compounding of prescriptions." It should be noted that according to the outline of the Syllabus many of the classes of extemporaneous preparations, such as ointments, plasters, and suppositories, have been taken up in the second year's work in manufacturing or galenical pharmacy, and typical preparations of each of these classes made by the student before he meets them in actual prescriptions. Furthermore, the Syllabus provides for a twenty-five hour course in Pharmaceutical Latin entirely aside from the dispensing course.

For the purposes of this paper let there be understood by Dispensing Pharmacy the extemporaneous preparation of medicine, including the study of such classes as pills, powders, and ointments; the consideration of the written prescription; the study of the great subject of incompatibilities; and the actual practice in dispensing physicians' prescriptions in the college laboratory.

The writer has devoted considerable time to study of the catalogues of the colleges of pharmacy of the United States with the view of learning how much time is set aside in the curriculum of the average school to the subject of dispensing. Several difficulties presented themselves in securing the desired information. It was found that a great many of the catalogues were exceedingly indefinite in their statements as to amount of time devoted in class-room and laboratory to prescription work. In some cases rather extravagant statements were made in regard to completeness of equipment and thoroughness of the course, but the reader was left absolutely in ignorance as to the number of hours per week given to the work, as well as to the number of weeks through which the instruction continued.

Another difficulty in making a fair comparison of the colleges in this matter was the great diversity in arrangement and grouping of the work. In some schools, for instance, the study of the classes of preparations commonly dispensed extemporaneously is first taken up in manufacturing courses, in other colleges the student apparently meets these for the first time in his dispensing course. In some institutions the curriculum provides a separate course in Pharmaceutical Latin, while in others whatever instruction in Latin is given is included in the dispensing courses.

Twenty or more colleges were found to make quite definite statements in their catalogues as to the time assigned to dispensing. It may be noted that most

* Read before the joint session of the Section on Education and Legislation, A. Ph. A., the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, Indianapolis meeting, 1917.

of these are members of the American Conference of Pharmaceutical Faculties. Some of those making definite statements offer one course consisting of lectures and recitations and another of laboratory work; others combine lectures, quiz, and laboratory practice in one course. This is a minor matter; it makes little difference under what classification the work is given so long as it is given in sufficient amount and with proper thoroughness.

In regard to the amount of work in dispensing, it was found that among those colleges making reasonably complete statements there was quite a wide difference in time assigned. One college, so far as could be learned from its announcement, devoted only 32 hours to dispensing; at least three institutions were well above 200 hours. The average time devoted to lecture and class-room work in these twenty colleges is not far from 36 hours, the average time to laboratory about 72 hours. Among those colleges stating the value of their dispensing courses in terms of university hours of credit, the average was about five hours. Many at least of the twenty or more schools referred to above also include extemporaneous preparations in their manufacturing courses. If 108 hours, or thereabouts, is the average for those colleges making definite statements in regard to dispensing, it does not seem probable that the time given by other institutions will average higher.

It will be noted, then, that many of our American colleges of pharmacy are using for instruction in dispensing almost twice the minimum number of hours suggested by the Syllabus. Judged by this standard, these schools are doing all that could be expected. However, the writer is convinced that even 108 hours is considerably less than the time required to give adequate instruction in regard to the prescription and all that pertains to it.

Shall we consider first the class-room instruction, or what may be called the theoretical part of the work? The writer, from his own experience and observation, believes that this should include not less than 72 hours. He would suggest a course of one semester of 18 weeks, two hours per week, given to the study of the written prescription in all of its aspects, and to the various classes of extemporaneous preparations. Even if the student has studied these classes and made some typical members of each in previous courses, his knowledge of them at this time is usually quite elementary. Ample time is necessary for detailed consideration of special cases. The instructor may use a part of the time of this course for lectures, but a standard text-book on dispensing should be in the hands of the students, lessons be assigned for study, and much time allowed for quiz and discussion.

During the following semester 36 hours of class-room work should be devoted largely to the subject of incompatibilities. After a consideration of the general subject and of the various classes, the imcompatibilities of the principal chemical groups should be taken up systematically. These should be illustrated by numerous prescriptions, which, if possible, should be thrown upon a screen for comment. A part of the time of this semester should be reserved for the more important of the newer remedies, with suitable discussion of their composition, physical and chemical properties, and incompatibilities.

The laboratory work in dispensing should run concurrently with the class-

room work. Following closely on the discussion of each class of preparations in lecture and quiz, this class should be taken up in the laboratory and numerous typical prescriptions of the class dispensed. Using ointments as an example; there should be prescriptions illustrating the incorporation of an insoluble powder, of a water-soluble solid, of an oil-soluble solid, and of a soft extract; ointments made with various bases and combinations of bases; ointments made by mechanical incorporation and ointments requiring fusion; ointments that can best be prepared on a slab, and ointments requiring levigation in a mortar; ointments dispensed in jars, and ointments dispensed in collapsible tubes. At least twelve or fifteen ointment prescriptions should be dispensed to cover these various cases. Some time can be profitably spent in the microscopical examination of samples of the ointments prepared, in order that knowledge may be gained of the efficiency of various methods. All of this will require time. If the prescriptions are so chosen that each one presents some new problem or difficulty to the student, he can not be expected to compound them with the speed of an experienced dispenser. He should be required to label and wrap each prescription as in actual practice. For this semester's work he should have not less than four hours per week in the laboratory, or a total of 72 laboratory hours.

During the second semester, while the subject of incompatibilities is being taken up in lecture and quiz, a great many of the prescriptions dispensed should be chosen to illustrate the principles discussed. The student will need time to experiment with different methods of overcoming certain difficulties. In some cases it will be profitable for him to compound a prescription by two or three different methods in order to compare results. Many prescriptions should be set aside and observations taken at intervals in order that color changes and precipitations may be noted if such occur. Of course it will be quite impossible for the student to experiment with all of the possible incompatibilities, but it is only by doing a large amount of such work that his resourcefulness is developed and he becomes fitted to cope successfully with the innumerable difficulties which arise at the dispensing counter. During this semester the student should be encouraged to bring in difficult or unusual prescriptions received in the store in which he is or has been employed, and should be given opportunity to experiment with methods of compounding the same under the advice of the instructor.

The prescriptions assigned during the second semester should include many of the important new remedies. The various organic compounds of silver, for example, present their own peculiar problems, and some of these compounds are very commonly prescribed. The subject of sterilization is assuming such tremendous importance that no dispensing course is complete which does not devote considerable time to it. Can anything less than 72 hours of laboratory work be considered sufficient for the second semester's course in dispensing? We would suggest, therefore, 72 hours of class-room work and 144 hours of laboratory practice, or a total of 216 hours, as the minimum time for dispensing work in the college course.

Some one objects: "Oh, it is impossible in the college prescription work to familiarize the student with all of the difficulties which may arise, we can teach him only the broad principles." Quite true. The writer is perfectly aware

that if all of the time of a two-year course were devoted to prescription practice, so infinite is the variety of possible combinations, that even then the young pharmacist would probably encounter in his first week of store experience something new and puzzling. No matter how long the school course or how extensive one's practical experience, it is only by reasoning out each new difficulty as it arises that one becomes a safe and successful dispenser. However, the college instruction in dispensing should be sufficiently extensive to familiarize the student with most of the typical cases, and, furthermore, to give the embryo pharmacist confidence in his own ability. Let a student make two or three emulsions, and it is quite probable that he will go out regarding emulsions as an unfamiliar and a treacherous class of preparations. If he happens to encounter an emulsion prescription somewhat different from those he dispensed at school, he is afraid of it, and will probably make a failure in compounding. Let him dispense enough emulsions in the school laboratory to come to a thorough understanding of the principles of emulsification, and he will receive emulsion prescriptions with confidence and even with pleasure, for what is of more satisfaction to the pharmacist than to dispense a well-made emulsion?

Doubtless one of the reasons that more time has not been devoted to prescription laboratory work in our colleges is the high cost of this instruction. The laboratory equipment, if at all adequate, is expensive. The cost of material used, if representative prescriptions are assigned, is considerable. Further, if the class is divided into small groups, as it should be for this kind of work, a great deal of the instructor's time is consumed. Hence the tendency has been to use most of the student's laboratory time in courses which required less expensive equipment and material, and in which the instructor can oversee the work of a larger group of students. Let us hope that the condition which has almost necessitated the neglect of so important a part of the curriculum will be gradually overcome. State authorities and legislative bodies will slowly come to understand that instruction in pharmacy, as in medicine, is expensive, and will become willing to provide the funds necessary for equipment and instruction. Institutions not under state control will find other means of adding to their incomes.

Another reason that dispensing work has been somewhat neglected is the difficulty of finding time in the crowded curriculum of the two-year course for all that should be done. While the writer is inclined to believe that a small amount of the time now commonly given to chemistry might better be devoted to prescription work, he will not contest this point, for it is quite certain that our students are not giving too much time to chemistry. Qualitative analysis, especially, is a splendid preparation for the study of incompatibilities. It is by the extension of the pharmacy course to three years that we must hope to find the additional time so urgently needed for a proper study of the prescription and a reasonable amount of practice in dispensing. The writer would urge upon those faculties which are introducing a three-year course the serious consideration of assigning more time to prescription work than was possible in the two-year course.

We will all agree that in compounding physicians' prescriptions "just right," the pharmacist is rendering to the public one of the highest services which comes within his sphere of activity. Why, then, should the preparation for dispensing

not be given a more prominent place in the education of the pharmacist? More emphasis on this work in our colleges, better equipment and adequate time for instruction, will mean that our college graduates will be better prescriptionists. It will mean more young pharmacists entering business with the determination that no matter what side-lines may be introduced, their stores will be prescription stores. Better prescription service will certainly mean more prescriptions written; it will go far to correct the omnipresent evil of the dispensing doctor. The writer believes that as pharmacists, whether practitioners or teachers, we should spend less time in bewailing the fact that physicians are not writing prescriptions, and more time in preparing ourselves to give dispensing service of the highest possible order.

Let all recognition be given by our colleges to the commercial aspects of pharmacy. Let courses in commercial pharmacy, store-management, drug-store accounting, and show-card writing be introduced and strengthened. The three-year course should give time for these also. But let us not neglect to provide for more instruction and better instruction in dispensing.

UNIVERSITY OF WASHINGTON,
COLLEGE OF PHARMACY.

PRIVATELY OWNED SCHOOLS AND COLLEGES OF PHARMACY.*

BY EDWARD SPEASE.

This subject is similar to one upon which I offered a paper one year ago. My paper at that time was either too insignificant to merit recognition, or every one endorsed my opinions. I can hardly credit the latter statement as being a fact, and so must content myself with the former one, and try again.

I am not trying to find fault with the views of other people—many of whom have had many more years of experience in educating pharmacists than have I—but as I gain age and experience, the questions present themselves to me—Is pharmacy worth while? and, Does every class of pharmacists make the proper unselfish effort to build up pharmacy? and, Are they all proud of the profession they have chosen?

I ask myself, Why is the pharmacist often a man of small vision? Is it his multitude of small sales that makes him so? Why do the majority of pharmacists—and often now, the layman—make the statement: "Ethical pharmacy is a thing of the past; I must develop the commercial side of my store." By the commercial side is meant, I suppose, the patent medicine business, sundries, cigars, candy, etc., as well as the various lines of preparations put up by various pharmaceutical houses whose sale has made some of these manufacturers immensely wealthy.

The tendency, generally speaking, or at least in the majority of cases, is to draw away from prescription work and the manufacture of our own preparations

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* Read before the joint session of the Section on Education and Legislation, A. Ph. A., the American Conference of Pharmaceutical Faculties, and the National Association of Boards of Pharmacy, Indianapolis meeting, 1917.

and compounds—even to draw away from the manufacture of U. S. P. and N. F. preparations.

Why do our leaders in pharmacy—many of them—advise us to associate ourselves with the patent medicine interests, yes, even with the vendors, for mutual self-protection in legislation? It must be because we are weak in ourselves.

Why are we not aligned with and on an equal footing with the best in the medical profession? Is the fault altogether that of the medical man?

Why have many of our pharmaceutical manufacturing houses made, and even solicited the making of patent and so-called "fake" medicines?

They will answer, of course—"to prevent these fellows from manufacturing them themselves, and likewise, from an altruistic standpoint, so that these medicines may be compounded by experienced pharmacists, and the danger to the public minimized."

Why do many of our manufacturers sell directly to physicians? Are they fearful lest the doctor manufacture for himself? Why is the physician merely a dispenser of pills and tablets—"canned medicines?" Why does the manufacturer find a market for solutions of cocaine ready for use by the doctor? Why does he make dispensing tablets?

Do our manufacturers all work for the best interests of our pharmacy schools, or do any of them ever interest themselves or permit their scientific men to teach in private schools, run solely for profit, Y. M. C. A. schools of pharmacy, and the like? If they do, does this help pharmacy, and help it ethically?

I have heard many men make the statement that they would be glad if never a prescription came in to them, because their help could make more money for the firm on the floor selling patents.

Why is it that of the many state boards of health commissions, committees and the like on health matters, existing and being appointed in our various states at all times, even those now for National Defense, the pharmacist is never regarded as a necessity? The veterinarian and the dentist, in these latter days, and always the physician—are chosen to serve the public in these groups.

We clamor at times for recognition of the pharmacist, but do we ever get behind the slogan "for the good of the public health?"

Why are not all our pharmaceutical associations in the same chain, and why do they not exist for the same purpose—the good of pharmacy amd the uplift of the profession?

Would not the combined money spent by the N. A. R. D., the A. Ph. A., the jobbers and the manufacturers, go a long way towards getting proper legislation for us and placing us once more on an ethical footing?

I have heard one member of the Revision Committee of our own U. S. P. IX say substantially that medicine is now an exact science, and that only known chemical compounds will be used in the future; that the field for pharmacy is practically eliminated, and that mixtures like tinctures and such preparations of vegetable drugs will soon pass out of use.

We hear the manufacturers say not to make any of our own fluidextracts, tinctures and things that they make; that the retail man's time is too precious to devote to such things, and besides, the trained scientific man in the manufac-

turers' laboratory is better fitted to prepare these things. This statement also came from another member of the U. S. P. IX Revision Committee.

Now, what does all this have to do with "Privately Owned Schools?" Just this: Is it the fault of these schools who first educated our pharmacists and whose graduates are the most active men in our profession to-day? Is it the fault of the university schools who came later, and the majority of whose graduates are comparatively young men?

I ask these questions for information only, and not to criticize. I feel it the duty of our Association to investigate these conditions, even to the point of banishing from our ranks individuals—if there be any—who stand opposed to the uplift of pharmacy.

Our schools should be the places where our pharmacists are trained, and there they should imbibe true pharmacy and a desire for better things. Do they?

Can a pharmacy school exist on tuition alone? Must it not have a large endowment, or receive State aid? I should like to know what it costs to educate a pharmacist, giving him the meagre training we now do. I have it on good authority from one of our medical schools, that the tuition per year is $125.00, but the cost to the school is $800.00 per student. Does it cost that to train a pharmacist?

Professors of pharmacy should be so trained that they can command big salaries, and these salaries should be forthcoming to them. Why do I harp on this old string? Because if properly paid, there would be enough of them so they could devote time to research, and not have to turn the eye toward commercial pursuits. Can the time ever come when private schools will ever approach this ideal? Never.

It has been said that universities will not recognize the merits of our schools of pharmacy. This is really so, in some cases, now. We can obviate these conditions by placing pharmacists upon university boards that control these matters, and then our university schools will be provided for properly.

Do our private schools, if there be any, really stand for better things? Is it not time that our Association as a whole desist from merely appointing a small committee on education and legislation—which of course go hand in hand—and really do something more in the matter of proper *education* for the pharmacist? *Legislation* will then come.

I ask you older men if it is too late to begin?

I did not write this paper in the spirit of fault-finding and scolding, but for the sake of receiving answers to my questions, if there are any.

CLEVELAND SCHOOL OF PHARMACY OF
WESTERN RESERVE UNIVERSITY.

WOMEN'S SECTION

WOMEN'S SECTION, AMERICAN PHARMACEUTICAL ASSOCIATION.*

MINUTES OF FIRST SESSION.

The Sixth Annual Session of the Women's Section of the American Pharmaceutical Association was called to order in the parlor of the Claypool Hotel, Indianapolis, Indiana, Wednesday, August 29, 9.30 A.M., by the President, Mrs. E. A. Ruddiman.

Rev. Dr. Allan B. Philpett invoked the Divine blessing. Following the inspiring words of trust and faith in Divine guidance during the progress of the Convention, the meeting was entertained by Mr. Arnold Spencer, who sang three numbers—Love Song, by Nevin; At Parting, by Rogers; Over the Desert, by Kellie. Mr. Spencer was accompanied by Mr. Arnold Coppock at the piano.

In behalf of the pharmaceutical organizations of Indianapolis, Mrs. F. R. Eldred extended a glad welcome to the members of the Women's Section in the following well-chosen words:

Madam President, Ladies of the American Pharmaceutical Association.—In behalf of the hostess city and the local organizations, I extend to you a most cordial welcome. We trust the few days spent in our winter capitol will prove pleasant as well as profitable days for all in attendance.

Unfortunately, the annual convention of the American Pharmaceutical Association is held during our warmer months; but whether we meet in Nashville, the attractive and picturesque capitol of Tennessee or in Atlantic City, a delightful resort of the great American public in summer, we return to our homes, I feel assured, benefited in many ways. How sweet, too, the renewal of old friendships as well as the forming of new ones!

We have with us women pharmacists, pharmacists' wives and daughters, all interested in the growth and promotion of one of the greatest factors in the life of the nation, and certainly of vast importance in the great war of to-day in which we are all so vitally interested. Therefore, we women of the American Pharmaceutical Association should unite and, by coöperation with our government, succeed in doing our bit, and more, for coöperation is the keynote to success.

In behalf of the Women's Organization of the N. A. R. D., Mrs. F. H. Carter extended a welcome to all:

Madam President, Ladies of the Women's Section of the A. Ph. A.—The Women's Organization of the National Retail Druggists, with a full heart and open mind, is glad to welcome you and to make you feel that in coming to Indianapolis you have made no mistake. Hoosier hospitality is of a kind that has no competitor. The joy of meeting you overlaps all feelings of formality. We are just one great big family. We welcome you.

In behalf of the state organization, a welcome was to have been extended by Mrs. F. W. Meissner of La Porte, but a disastrous fire which damaged their business place the day preceding this meeting, detained her and she was unable to be in attendance but sent a lettergram of regret and greeting.

The President then called the Second Vice-President, Mrs. George M. Beringer, to the chair during the reading of the President's address.

The President, Mrs. E. A. Ruddiman, then read as follows:

THE CHAIRMAN'S ADDRESS.

On behalf of the members of the Women's Section of the American Pharmaceutical Association, I wish to thank the ladies of Indiana and Indianapolis for their very cordial welcome. We are anticipating a delightful stay in your city and the few hours already spent here show that we will not be disappointed.

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* Papers will be printed apart from the minutes of the Section.

And to you the members of this Section, I bring greetings and good wishes. We are glad to welcome you and hope that your pleasure and profit will be so great, you will always desire to attend our annual meetings. We wish to bespeak your cordial coöperation in the work of our Section, and ask that you will attend the sessions, both business and social. We would welcome any suggestions making the Section more efficient or its meetings more profitable. By all working together we hope to make this the most interesting meeting the Women's Section has ever held.

I might speak to you about many things of interest to this Section, urging you to keep up agitation for shorter hours in drug stores; to work for higher standards of education for pharmacists; to secure uniform requirements for education and Board examinations, and reciprocity among the different states; to seek better recognition for pharmacists in the Army and Navy of the United States. All of these are lines of endeavor worthy of the effort of this Section and would tend to elevate pharmacy. And let us not forget to secure new members for the Association. That is a duty we have always with us.

But there is one line of work I wish to emphasize and it is particularly appropriate to do this, when so many young men are being called to leave their work and women must take their places. Pharmacy is a profession well fitted for women and the members of this Section would do well to stress that fact and try to induce young women, seeking work along professional lines, to adopt it. On all sides pharmacists are calling for clerks and surely young women who are prepared may secure positions if they so desire. There will be an increasing demand for pharmacists in hospital and Red Cross work. Pharmacy is a profession demanding special training, not a business which may be acquired in the office or at the counter. So many young women should this year begin their college work. This is in line with President Wilson's suggestion that all young men and women continue their professional training, that they may be ready when the call of duty comes.

Before closing there is one message I want to give you, even though it is not connected with pharmacy. I would like to give it to every group of intelligent women in the country, regardless of the circumstances which bring them together. I can not reach all women but I can reach you and I ask you to pass the message on. It grows out of the awful conditions in which the world finds itself to-day.

Broadly speaking it is only within a few decades, that women have begun to be educated or to think for themselves. Before that they accepted the dictum of the ages as to the conditions of life, as to what was right or necessary. They accepted life as it was made for them and endured hardships and suffering as best they might. And now we find ourselves in the maelstrom of this awful war. Whatever degree of responsibility we may have, we can not now escape. "The only way out is straight through," as I heard one man say. We accept our duty to do everything to end it, as soon as possible, in the right way. We will give our boys to be soldiers and our girls to be nurses. We will sew and knit, economize and conserve the resources of the country. We will go on with life and endure the suffering and agony, but we rebel against it. Women all over this world to-day are in rebellion against war as they never were before.

We have always been told that war is necessary, even ennobling. To-day we are questioning those statements and we have about come to the conclusion that, unless a way can be found to get along without war, life is not worth living and the sooner the human race dies out the better. If when this war is over, there is nothing to do but get ready for another, why keep on bearing and rearing children; why try to discover the most healthful conditions for their life and the best form of education for them. It will only be used in devising more fiendish forms of torture for killing their fellow beings.

No, we must start out with a different thought, not that war is necessary and we must be prepared for it, but that there is a way to get along without war and we must find it. Now while we are in the midst of this awful struggle, we must do everything to help, but while we are working let us also be thinking that when the time comes, we may be ready to join with thinking women all over the world to put an end to war. Perhaps that is the reason we have been given these larger opportunities of education, experience and influence. "Who knoweth whether thou art come to the kingdom for such a time as this."

Complying with a motion by Miss Cooper, duly seconded and adopted,

Mrs. Beringer named Mrs. W. C. Anderson, Mrs. W. C. Bartholomew and Mrs. C. Blakeslee a committee on President's address, instructing the committee to report at the meeting Friday afternoon.

Greetings from the following officers and members who were unable to attend were read by the Secretary: First Vice-President, Mrs. E. G. Fine, Mrs. Elizabeth Kelly, Miss Bertha Ott and Mrs. Mary E. Apple, Treasurer.

The following committees were then appointed by the President:

Nominating Committee: Mrs. H. M. Whelpley, Chairman, Mrs. E. G. Eberle, Mrs. O. F. Claus, Mrs. E. W. May and Mrs. F. H. Carter.

Resolutions Committee: Mrs. W. L. Dewoody, Chairman, Mrs. Charles Holzhauer and Mrs. Alfred Huested.

The committees were instructed that reports should be ready for the Friday afternoon session.

The annual report of the Secretary was then read by Mrs. Kenaston:

SECRETARY'S REPORT.

Madam President, Officers and Members of the Women's Section of the American Pharmaceutical Association.—With a sincere sense of gratitude for the privilege of serving this organization, I herewith render an account of the stewardship which you have so generously bestowed upon me.

It is with the keenest appreciation of the confidence expressed by this body one year ago at the Atlantic City meeting, when you elected me Secretary of the Section, that I submit to you the following statement of the duties performed during the year.

All requests for assistance in gathering the necessary materials and data for the publication of the minutes of the Atlantic City meeting, sent by the editor of the American Pharmaceutical Association JOURNAL were promptly complied with. We are indebted to the editor of the JOURNAL for special efforts to publish the minutes in an attractive manner also for the excellent page of photographs of the elected officers. Pursuant to the recommendation of President Mrs. G. D. Timmons, reprints were ordered, amounting to two hundred copies, from the February 1917 issue of the JOURNAL at a cost of $10.90, which amount includes express on same. Copy of bills for same is herewith presented and made a part of this report. Packages containing a number of copies of the reprints were mailed from the Secretary's office to the chairman of each committee with a letter advising that more were available if desired. Not any requests for additional copies have been received.

At the Atlantic City meeting your Secretary was instructed to issue a letter advising members of the American Pharmaceutical Association that the women of their families thereby were eligible to membership in the Women's Section. This request was complied with and with the kind coöperation of your President and the generous courtesy of the Treasurer of the American Pharmaceutical Association, a form letter was sent out from the Secretary's office and also as an enclosure with the receipts from the Treasurer's office to all members of the Association. This letter was processed upon the letterheads furnished to the Secretary of the Women's Section, copy of which is herewith presented.

The results of this work and the experience gained leads your Secretary to conclude that it was a worth while effort though not followed by the number of replies that was expected. I would further express the opinion that should it be the pleasure of this meeting to direct that a similiar plan be pursued the coming year, more definite results may be apparent and the enthusiasm gained during 1916–17 through this procedure will not be lost but rather multiplied as this and future years advance.

Copy for letterheads and envelopes were furnished printers and order placed as per attached receipted bills, amounting in all to $18.54, with the additional cost for express of $0.88, making a total of $19.42. This stationery was distributed to the elected officers and chairmen of committees. From letters received and the necessity of changing about in quantities to make the amounts meet the requirements of the various officers, I believe the amount ordered was practically the correct number that ordinarily would be used each year.

Your Secretary was also directed to write each newly elected member of the American Pharmaceutical Association advising the women members that by virtue of their membership

in the A. Ph. A. they also were members of the Women's Section. Letters were sent to those joining earlier in the year, extending the cordial and fraternal greetings of the Section and inviting their coöperation and assistance in the work of the Section. Letters were also sent to the newly elected men members as their names appeared in the Council letters printed in the JOURNAL advising that the women of their families were entitled to membership in the Women's Section providing they may elect to be so recognized. Cordial fraternal greetings were extended together with an invitation directed to the women, to attend the next annual meeting and become active members in the Women's Section. The rush of business incident to the demands for time to be given on the altar of patriotism, prevented the continued issuing of the letters as mentioned above and for this reason not all new members were thus welcomed.

Correspondence with the secretaries of state boards of pharmacy with a view to collecting data regarding women pharmacists and the promotion of the objects of the Section in so far as we may be in a position to remedy existing unfavorable conditions relating to women in the profession, was also directed by the Atlantic City meeting. The series of letters addressed to the secretary of each of the several state boards of pharmacy brought replies from almost every state and no doubt those who have not reported at this date will do so in a short time. Many kindly advanced ideas for the improvement of the conditions now prevailing in the profession—the main thought resulting from the perusal of the letters is that we must have a campaign instituted, directed in such a manner that shorter hours will be conceded.

More especially should we plead for the sacredness of the Sabbath and relief from commercial duties for that day. Neither you or I could conscientiously encourage our own son or daughter to seek an education in a profession that bids fair to deny him or her the right to recognize the Divine command "Remember the Sabbath day to keep it holy" or do we wish to invite such influences as extended from our places of business. Will we assist in the influences that may speedily bring to us the acceptance by the public that the drug stores close their places of business at seasonable hours and on the Sabbath day?

A number of the replies called attention to the value of the education of young women to fill the positions made vacant by the young men who have responded to the call of our country and have patriotically enlisted in the cause of justice and freedom. The desirability of young women entering the profession could be made a proper subject for discussion and some means decided upon that would be effective in bringing this matter to the attention of the young women now of the age when selections are to be made that will decide their life-work. The data collected will prove of inestimable value to the Secretary's office in the event that it is the pleasure of this Section to further direct that the objects of our Section may be promoted and that we unite to study the conditions surrounding women in the profession with a view to increasing its value as a profession for women. The value of this investigation would be enhanced if further communication be directed to all registered women pharmacists during the coming year. The replies to the various communications could be made the basis for specific work; particularly would this be true if combined with the information gleaned from the secretaries of boards of pharmacy. We are justified in assuming that their extended experience would give us the correct ideas from which we may form conclusions as to what may be the greatest needs and supply that need so far as may be possible.

Inasmuch as South Dakota is the only state wherein legislation has been enacted providing that all registered pharmacists become active members of the State Pharmaceutical Association immediately upon successfully complying with the law governing registration and remain active members during the time their certificate of registration is in force, and your secretary is a member of that Association with the printed records of same at hand for reference, but little additional information could be secured by addressing the secretaries of the various state associations.

The letters addressed to the deans of Colleges of Pharmacy and other colleges maintaining a Department of Pharmacy met with the most generous, prompt and complete replies—lists of graduates with their present addresses, professional positions, etc., were received by this office and are now on file for such use as the Section may direct. Many added suggestions for advancement of the profession, all such suggestions, we have the right to assume, are the result of long years of thought and experience and hence should be regarded as practical.

All the correspondence resulting from the above communications is on file in this office,

also lists of the names of registered women pharmacists prepared in card index form and furnished the present Secretary by your former Secretary, Miss Anna Bagley.

The various journals devoted to the interests of pharmacy have commented editorially from time to time throughout the year on the continued efforts of the Women's Section. We trust this courtesy on the part of the editors will result in the favorable publicity desired by the Women's Section and that our aim to advance the interests of the parent organization together with the special purposes of the Women's Section may be a future development.

Following the direction of your President, the office of the Secretary furnished announcements of the coming meeting of the Women's Section for the July issue of eight pharmaceutical journals throughout United States and also in Canada, directing to the different localities so far as practical; all journals generously gave their valuable space to the announcement as furnished. Tentative programs for this meeting were furnished direct to the A. Ph. A. JOURNAL for the August issue by the Chairman of the Executive Committee.

I have written 3,814 letters and 170 post-cards, in conducting the necessary work of the office. Sometimes the answers to your letters may have been slow in reaching you because of absence from home, but I have replied to every letter received.

Fraternally submitted,

JEAN MCKEE KENASTON, *Secretary.*

The motion prevailed that the Secretary's report be accepted and that same be referred to the committee on addresses.

The Treasurer, Mrs. Franklin M. Apple, submitted a written report, showing the sum of $9.00 in her hands.

The motion prevailed that the Treasurer's report be accepted and placed on file.

A paper by Mrs. W. B. Philip, entitled "Problems in the Druggist's Home," was read by Mrs. C. A. Dye. (To be printed.)

Very interesting discussions upon this paper were offered by Mrs. Timmons, Mrs. Dewoody and Mrs. Thatcher. Many interesting features and helpful thoughts were advanced which were at once greatly enjoyed.

Miss Zada M. Cooper read a paper upon the subject "Teaching the Public" (see p. 177, February issue).

Excellent discussion of the subject was opened by Mrs. Godding, followed by Mrs. Timmons and others.

Dr. F. J. Wulling, President of the A. Ph. A., honored the Women's Section by a personal visit at which time he addressed the meeting as follows:

REMARKS OF PRESIDENT F. J. WULLING.

I have ventured into your session to bring you the personal endorsement of the President of the Association and to give evidence of my interest in your work.

I will speak only briefly because I will be due in another section presently. My purpose is merely to encourage you with what little my endorsement of your work would mean to you. The Association is very grateful for your coöperation. As Mrs. Godding has just said, there is a distinct place for women in pharmacy. The influence that they may exert upon pharmacy may be otherwise than purely pharmaceutical. There is the refining and affirmative influence upon the men pharmacists of the happy-home makers and of the sweethearts and of the sisters. Then there is the active participation in the profession, and in that respect the women are increasing their contributions toward the sum total of pharmaceutical development and progress, and for that we men are very grateful.

As I have tried to point out a number of times at this convention, we are really in a critical period; pharmacy in America is in a critical period. Possibly I look upon the matter more seriously than others do because I have put a good deal of study upon it and have endeavored to find remedies. I see many difficulties that before were not apparent to me. We must think of remedies and I have suggested a few. Besides remedies we need help and the kind of help that comes from the women in pharmacy is of the affirmative kind, the uplifting kind. The women in pharmacy create, wherever they are, a splendid atmosphere and environment; they elevate the

surroundings by their presence. Aside from that, they have shown that they have real capacity for professional pharmaceutical service.

I am a teacher and as such help train young women in pharmacy and know how splendidly they take hold of the work and how conscientiously they work. I do not want to make a comparison that would be unfair, but I can say consistently the young women students are as a rule more earnestly devoted to study than the young men are. The young men tell me they have greater interests, wider circles of activities, and a good many other reasons for their lesser application.

There was a time when women pharmacists were looked down upon. I remember that time very distinctly when it was generally held that women had no business anywhere than in the home. Those times are past. Men have come to recognize that women have made places for themselves elsewhere as well as in the home. I feel, as I think you all do, that woman's first place is in the home, but there are other places as well for her. You have chosen a very good other place. I am one of those who claim that women can be in both places. You here assembled and your absent associates of the Section are doing a very splendid work, and as President of the Association and personally, I congratulate you upon the fine work you are doing in the Association and out of the Association.

The President extended the thanks of the Section to Dr. Wulling for the courtesy which he had extended, also for the kind words of encouragement and commendation for women in pharmacy.

The President then asked for reports of committees.

Mrs. John Culley, chairman of the Outlook Committee, was not present but submitted the report of the committee which was read by the Secretary.

REPORT OF THE OUTLOOK COMMITTEE.

Madam Chairman and Members Women's Section, A. Ph. A.—The chairman of the Outlook Committee has the pleasure to report that during the past year communications were addressed to each member of the committee and to others interested asking for suggestions that would be of benefit to the future welfare of the Women's Section.

A number of replies were received with various suggestions. One that may be of great value came from Mrs. Claire Albert Dye in which she reports that the women of Columbus, Ohio, interested in pharmacy, have organized a Women's Pharmacy Club for the purpose of uniting more closely their families in a social and business way. If the example set by the women of Columbus could be carried out by the women of other cities and amplified in state associations, then the women of pharmacy would come nearer understanding the aims and objects of the Women's Section of the A. Ph. A. as set forth in our constitution and outlined in the bulletin sent out by President Ruddiman, date of January 22, 1917.

Each year brings us nearer the accomplishment of the task of uniting the women of pharmacy. The outlook for the coming year seems to forecast more and more responsibility for women in all walks of life and to the women of pharmacy in particular will be afforded many opportunities to enter actively into business thereby serving themselves as well as their country.

Your Outlook Committee can make no better recommendation for the coming year than that the information conveyed in President Ruddiman's bulletin be placed annually before every woman who is eligible to membership in this section.

Respectfully submitted,

ELIZABETH CULLEY, *Chairman.*

Upon motion of Mrs. Charles Holzhauer, duly seconded, the report of the Outlook Committee was received and placed on file. The motion offered by Miss Cooper and seconded by Mrs. Timmons prevailed, that the recommendation included in Mrs. Culley's report relative to letters to be sent new members, shall be followed during the present year. The Secretary was instructed to continue the letters as in the past year; similar to the letters issued by the Section during 1916–17.

Miss Anna Bagley, General Chairman of the Membership Committee, not

being present, submitted the report for members in the A. Ph. A. which was read by the Secretary.

REPORT OF MEMBERSHIP WORK.

Your Chairman sent out 200 letters to the list of names in the file, these being selected as to territory within a reasonable radius of Indianapolis.

The result was three memberships and a number of letters returned unclaimed. The new members thus secured are: Miss Julia Emanuel, Fort Wayne, Ind., who owns and operates her own store; Miss Leafy A. Sauer, Pittsburgh, Pa., pharmacist at the City Hospital; Miss Alma F. Berhkersman, Cleveland, a practicing pharmacist.

In addition Mrs. Timmons secured two members for which our Section gets credit, making a total of five members.

The letters returned will be used to correct the files and a duplicate of the correction furnished the Secretary for her files.

In addition the Chairman wrote quite a number of personal letters in regard to membership.

While this is not a very flattering report, it has enabled the Women's Section to pay its own way again, as our appropriation from the A. Ph. A. was but $25.00.

It is suggested that if these three women members are in attendance, they be specially welcomed to the Section. The expense of the letters was taken care of by the General Membership Committee.

Respectfully submitted,

ANNA G. BAGLEY, *Chairman.*

Miss Zada Cooper moved the adoption of this report which was duly seconded and carried.

Mrs. G. D. Timmons, chairman of the Executive Committee, reported as follows:

REPORT OF EXECUTIVE COMMITTEE.

Madam President and Members of the Women's Section of the American Pharmaceutical Association.—

The Executive Committee believe that a detailed report would not be necessary or even desired at this time. We therefore respectfully submit the following:

During the year we have endeavored to interest ourselves in a general way in the activities of our Section—keeping in touch with the work of the officers as well as with the work of the various committees.

In view of the fact that the demands on women's time are greater than ever before it is gratifying to note the gradual increase in the activities of the Women's Section.

Approximately 150 personal letters were written and a reply received in every case where a reply was at all necessary, with possibly one exception.

The principal endeavor of our committee centered around the program. Valuable assistance was rendered by the former chairman of this committee, Miss Cooper, and by Miss Bagley, the former Secretary. The present efficient officers have also been very helpful in this work.

To all who have had any part in the preparation of the program we wish to express our appreciation.

[Signed] ADELINE GODDING,
CLARISSA ROEHR,
CECELIA M. TIMMONS, *Chairman.*

Mrs. H. M. Whelpley moved the adoption of the report, which was duly seconded and carried.

Mrs. J. G. Godding proposed that the Section send a letter of greeting to Miss Anna G. Bagley, the former Secretary, expressing regret because of her absence. To this the meeting most cordially assented.

Mrs. Godding spoke in part as follows: We cannot be too grateful that we had brought to us the most efficient Secretary who is now with us, and we hope she will long continue. But for one who stood in the first days of this Section, who realizes as no one else, perhaps, can quite realize, what Miss Bagley was to

us then in those days. After we had been invited to become a Section we met with obstacles and difficulties and Miss Bagley, although occupied in a very prominent position, and obliged to give much time to her own duties, did such great work for this Section, I feel that we should not forget her, and I move that we send a most cordial letter of greeting to her and that, further, we express our deep regret that she is not able to be present with us.

Mrs. Godding's motion was duly seconded and carried. The Secretary was instructed to write above letter.

Two of the former Presidents of the A. Ph. A. having been called by death, it was the sense of the meeting that letters be written the members of the bereaved families, expressing the sympathy of the Section. The motion of Mrs. Whelpley, duly seconded, prevailed and the Secretary was instructed to convey to Miss Diehl, daughter of ex-President Diehl, the kind interest and sincere sympathy of the Women's Section. Further that similar letters be sent to Miss Alpers and Mrs. Alpers, daughter and the widow of ex-President Alpers.

Upon motion duly made, seconded and carried, the first session adjourned as a business meeting until Friday, the program for the interval to consist of a series of entertainments provided by the hostess city.

SOME MEMBERS OF THE OFFICIAL FAMILY OF THE WOMEN'S SECTION, A. PH. A.—Upper row, left to right: Miss Zada M. Cooper, *President;* Mrs. Jean M'Kee Kenaston, *Secretary-Treasurer;* Mrs. E. A. Ruddiman, *Retiring President and Member of Executive Committee;* lower row, left to right: Miss Anna G. Bagley, *Chairman Membership Committee;* Mrs. Geo. D. Timmons, *Member of Executive Committee;* Mrs. John Culley, *Chairman Outlook Committee.*

ENTERTAINMENT FEATURES.

Wednesday afternoon the members of the Women's Section were tendered a most delightful entertainment when the musical program arranged for their pleasure was given in the Louis IV parlors of the Claypool Hotel; Mrs. Spencer and Mr. Taylor each gave several most pleasing numbers—their voices are rare and selections of songs excellent. Mr. Coppock gave several splendid piano selections all of which were greatly enjoyed.

Following the musical program, a very enjoyable reception was given the guests of the afternoon with the Indianapolis ladies as hostesses.

Thursday, August 30, the members of the Section were the guests of the local people and were taken for a long auto ride including many places of interest and beauty in and near the city, the automobile party leaving the Claypool Hotel at 9.00 A.M. and returning in time for the ladies to be in readiness for an elaborate luncheon at which they were the guests of the local organizations. Lunch was served in the Florentine Room of the Claypool Hotel at 1.00 P.M. The room was beautifully decorated in summer decorations and every feature was most pleasing.

Thursday evening, August 30, in common with all members of the A. Ph. A., the members of the Women's Section were the guests of Messrs. Eli Lilly and Company at their Pharmaceutical Laboratories. Automobiles were provided for conveying them to and from the laboratories. While at the plant the visitors were conducted through the entire buildings and factories, which, by special arrangement, were operating throughout. Guides accompanied the visitors and gave careful and complete explanations of each step in the various lines of manufacturing of interest to the pharmacists. After making the rounds of sight-seeing, delicious refreshments were served. Music was provided as a further feature of entertainment.

MINUTES OF SECOND SESSION.

The second business session of the Women's Section of the American Pharmaceutical Association was called to order by the President, Mrs. E. A. Ruddiman, at 2.00 P.M., Friday, August 31, 1917.

Mr. Taylor entertained the meeting with two selections. He sang "Stars of the Desert," by Woodford-Finden, and "You Are All That Is Lovely."

Dr. C. B. Jordan of the Purdue University addressed the Section as follows:

REMARKS OF C. B. JORDAN.

Madam President, I have wondered why the ladies were so enthusiastic about their meetings. I can see one reason. You always have music; but I do want to say that is not the only thing that makes the ladies enthusiastic. Mrs. Jordan is very enthusiastic about it.

Early in May, I believe it was, one of my girls came to me and said, "We would like very much to be acquainted with the girls in the other universities who are taking pharmacy and we would like to be acquainted with the ladies who have graduated from the Purdue School of Pharmacy, and they have started an organization somewhere in the West, in one of the California colleges, to bring about a movement whereby the ladies in schools of pharmacy and the ladies who have graduated from schools of pharmacy can get together and become better acquainted." I said I thought that very fine and we looked over our list of alumni. We were surprised to find that fifteen women had graduated in pharmacy from Purdue. The girls began to write to them telling them what they wanted to do, that they wanted to become better acquainted with the women who had taken pharmacy. There naturally is, you see, a bond of sympathy there, and it is especially true at Purdue because all the other ladies in the college are acquainted with each other and take an active interest in each other's work, but it is pretty difficult for those who are taking pharmacy. I said, "Now that you have started that, I think it is a fine thing, and it seems to me that the Women's Section of the A. Ph. A. would be the proper organization to mother such a movement." And that explains my presence here this afternoon.

When I go back, my girls are going to ask me if anything has been done about it, and what they can do and what steps they can take to become better acquainted with those interested in pharmacy, and I am in hopes that this organization will take some steps to bring about a closer union for the young ladies who are taking and who have taken pharmacy. I do not know whether there should be a sorority or some other organization to bring about that end, which to me seems very desirable. I know it will take some time to study this out. You can't do it at once; but I

do hope that this organization will at least take some steps toward a solution of the problem, if you think it is desirable. Perhaps it might be well to appoint a committee to study the matter for a year. I know it would please the ladies who are taking work at Purdue if such a committee was appointed by this organization. I would like to know what the members think about this. I thank you very much for the opportunity to speak to you.

Mrs. Ruddiman thanked Dr. Jordan for the timely suggestions and inquired the pleasure of the meeting, relative to the matters as presented by him. After discussion by several of the members present, the motion of Mrs. Whelpley prevailed that the Chairman appoint a committee to take the matter under advisement and report at some future date.

The President named the committee to consist of the incoming officers and Executive Committee of the Section; this committee to work along the lines as suggested by Dr. Jordan in his address and report to be made at the 1918 meeting of the Section.

Miss Bertha Ott, who was not present, submitted a paper that was read by Miss Florence F. Koch, the paper being entitled, "Some Social Service Aspects of the Hospital." (See p. 820, September issue.)

Discussion of the paper was opened by Mrs. Dewoody, who said in part:

"He who serves best his fellow man,
Is serving God the holiest way he can."

Mrs. Timmons then stated that we have with us as our Secretary, Mrs. H. R. Kenaston, the President of the South Dakota Congress of Mothers and Parent-Teachers' Associations and will call upon her for remarks along the lines of this paper that are included in the purposes of that organization.

Mrs. Kenaston spoke in part as follows:

The work of the Parent-Teachers' Association as it may apply to the work called for in this paper would probably refer to the very earliest work that is given under the direction of the Parent-Teachers' Association. It is carrying on hygiene in the public schools. Their first duty is to talk with the young people, and with the expectant mother, so that the early seeds of life may be properly protected and reared to the highest possible degree of physical, mental and moral fitness to occupy this earth. Everything for the care, for the first three years of the young child, is under the direction of the Child Hygiene Circle, where the child is given practical attention until it becomes of "kindergarten" age. The mother is taken into the Parent-Teachers' Association rooms where the lectures are given for their mental development along the lines of the various requirements of the child. The little one, if the mother cares to have it so, is kept under the care of a trained nurse in an adjoining room, so the mother is free to attend the meetings and need not fear that the baby will disturb the meeting. Later the child is cared for by the Kindergarten Department of the Parent-Teachers' Association, and in the larger schools this plan is worked in connection with the provisions of the local school boards. Later in life the training of the child is continued and the first thought is always for the physical, moral and intellectual welfare of your boy and my boy, your girl and my girl. It is hoped through this channel that the better humanity may exist in the generations to come. We can't do much for the present. It is the future that the Parent-Teachers' Association has planned to look out for.

Mrs. H. M. Whelpley entertained the meeting by giving a reading; the beautiful story preceding the reading was given in the following words:

The little poem I wish to give you was written by a graduate of the Alton High School. She resides with her aunt in the Godfrey homestead at Godfrey, Illinois. Many of you may know that Captain Godfrey was the founder of the oldest existing female seminary in the United States. It was the second one to be founded, but the other one went out of existence. This one now exists, and is in, I think, more prosperous circumstances than ever before.

In this poem of thirty-six stanzas she commemorates the Indian Legend of Lover's Leap and also the Reverend Mr. Lovejoy who was, in 1826, a teacher and Presbyterian minister in St. Louis. He afterwards became editor of a religious paper called *The Observer*. Although not

of a band of Abolitionists, he was strongly in sympathy with them. In 1836, when a negro was taken from the jail and tied to a tree and burned to death, the judge instructed the jury that if the mob were impelled by a metaphysical, or mysterious frenzy they should be absolved from guilt. Lovejoy's pictures in the case led to the destruction of the office of *The Observer*. He then left St. Louis and went to Alton, but his press was destroyed before it reached Alton. He was reimbursed by some of the citizens, but that press was also destroyed. Another one was purchased, and that was destroyed and thrown into the Mississippi River. The citizens of Upper Alton then held a convention and decided in the name of liberty and freedom of the press that the office of *The Observer* should be allowed to continue in Alton. Another press was purchased, and that was not taken to the office, but was stored in a warehouse, where it was guarded by Lovejoy and some twelve or fifteen friends. At midnight the warehouse was attacked by a mob, the windows broken in, and fire set to the building. Lovejoy went out to defend the press, was shot and died almost instantly. A monument now commemorates this sacrifice to liberty.

Miss Mary Creighton prepared a paper, which was read by Mrs. May (Miss Creighton not being present), entitled, "Chemistry of the Household" (see p. 179, February issue).

Dr. H. V. Arny addressed the meeting as follows:

Madam President and Ladies of the Women's Section.—Permit me first of all to thank you ladies for the great courtesy of asking me to come to speak to you on the Metric System. It is indeed a great privilege to be invited to address you.

Secondly, I wish to bring a personal word of greeting to the ladies of the Women's Section from my sister, Elizabeth Godbold, of New Orleans. I want to explain at this time, although it seems rather late, the tremendous appreciation she felt at the honor you conferred upon her at the San Francisco meeting by choosing her as the honorary President of the Section. I would not bring this up now, except that through some misunderstanding the letter of appreciation she sent to Miss Bagley last year was not read at Atlantic City and I want to tell you how grateful my dear sister Elizabeth is to the Women's Section.

THE METRIC SYSTEM IN THE HOUSEHOLD.

I am going to discuss with you the metric system and that from the broadest standpoint. There is a good deal of talk now in regard to dropping our archaic system of weights and measures and taking up the metric system, and what I want to talk about to-day, to you who are representatives of such a large number of women's clubs throughout the entire country, is whether I can not persuade you ladies to give talks and read papers before your respective women's clubs, on this subject of the metric system.

We have started the American Metric Association in order to begin a campaign of education. We want to educate the people of the United States to the fact that we are wasting millions of hours of time and millions of dollars by using the old system. I have a theory that practically all standards, until the metric system was adopted, were chosen primarily ages ago to fool the purchaser, making it as difficult as possible for the purchaser to understand what he was buying or how much he was getting. For instance, flour is never sold by the pound. You buy flour for $2.10 for the bag of 24½ pounds. Who is going to calculate the price per pound? There is the difficulty. You have got to get down to a long division to calculate. The metric system will reduce this unnecessarily complex calculation, since the system is based entirely on units of ten. If you want to calculate you would simply divide by ten. If a certain thing calls for a meter, for example, say 36 or 40 cents a meter in length, then, if you want to buy a tenth of a meter it would be one-tenth of the amount, and that is one of the great advantages of the metric system.

At the meeting at which the American Metric Association was organized, we had the great pleasure of hearing Madame Montessori speak on the subject, and there was present at that meeting also the greatest anti-metric advocate in the country, a man connected with the machinery trades, and it was very interesting for this man, who has written that the metric system was so complex that nobody could understand it, to hear Madame Montessori call attention to the fact that the blocks with which she taught arithmetic to children three years old, were based on metric units.

I have here a little ruler representing the tenth of a meter, which is a forty-millionth part of the earth's circumference around the poles. In other words, if you are going to make a tour of the earth around the poles you have to walk 400 million times this space here. It is about the width of a hand. To encircle the world, it would require 400 million hands side by side.

The standard of the metric system is this meter stick, which I now show. This meter stick is nothing in the world but a yard stick, which is a little bit elongated. In other words, instead of being 36 inches, it is a trifle over 39 inches long. It was devised by surveyors and accurately measured to the standards we speak of, so that in case the original standard ever got lost, it can be replaced by the same measure by which the original was made.

This meter stick is divided into red and blue tenths, the latter being identical with the metallic rule I first showed. Even as we talk about the dime as the tenth of a dollar, so this is called the decimeter as representing the tenth of a meter. We find in turn this is divided into tenths, such a tenth being called the centimeter or one-hundredth of a meter. And finally it is divided into an exceedingly small division called the millimeter.

The meter is, of course, of comparatively little importance to us in pharmacy, although of course, it is of vast importance in so far as you ladies are concerned in purchasing cloth. As the meter is about a yard and a tenth, a meter of cloth should cost about ten percent more than the yard.

The Montessori blocks which I now show make a pyramid of ten and of these the bottom one is a tenth of a meter (or ten centimeters) in length, breadth and thickness. The next one is nine centimeters, the next one is eight centimeters, the next seven, the next six and the next five, and finally the very small one at the top represents one centimeter.

The largest block, the cube of a decimeter is called the cubic decimeter and is one of the standards of volume of the metric system. If we had a box of this size filled with water, we would have 33 ounces, or a trifle over a quart. This smallest block, the cube of a centimeter, is called the cubic centimeter, which is the second unit of volume. A cubic decimeter (or liter) represents 1000 cubic centimeters. The liter is the common unit of volume, being slightly over a quart. The cubic centimeter, on the other hand, is about one-fifth of a teaspoonful. If we have this liter measure filled with water, the weight of that liquid under standard conditions represents the standard of metric weight. The weight of a liter of water is called a kilogramme and represents 1000 grammes, or slightly over two pounds. The weight of water having the volume of this small cubic centimeter block is called the gramme and the ratio of these two units, gramme and kilogramme, is one to one thousand.

The foregoing statements show how exceedingly simple is the relation of metric units to each other. Another advantage is that in the metric system, there is a definite relation between length, volume and weight. Just think of our old system of weights and measures! What relation is there between a gallon and a pound, or what is the relation between a gallon of water and a mile? Could you talk about a mile of water? Of course, you could calculate, and if you took days to figure it out, you could finally, I suppose, arrive at the ratio to a certain extent.

Having pointed out the advantages of the metric system over our present system of weights and measures, let us next discuss how are we going to bring it into general use in this country? Among the most enthusiastic supporters of the metric system are the canners and the wholesale grocers. One of the most active men in organizing the Metric Association was Mr. Drake of the National Wholesale Grocers' Association, and I want to point out that he has started to educate the public in a very practical way. I presume you all know that under the Food and Drug Law, every package of goods that is a definite staple, like canned goods, has to bear upon the package the weight or volume of material actually sold. The idea of tfiis law is to prevent a package of—let us say vanilla extract—that really holds two ounces from being considered by the purchaser as a four-ounce bottle. What Mr. Drake and a large number of canners are doing is to put on their packages not merely the weight in ounces, but also the metric equivalent, so as to gradually educate the public to the relation between grammes, which is the standard metric weight, and pounds and ounces.

I might point out, as I have already explained, that a thousand grammes is about two pounds, and therefore a pound is about 500 grammes, or, more strictly speaking, it is 453 grammes; but the idea is to educate the general public to the use of this system in a practical way. I am

going to emphasize what I have already told you, that from experience of my own in Germany I found that in the course of a couple of months of actual work with it you will find you think in terms of the metric system and when you once do that, then the rest is much simpler than our present weights and measures where we have to divide by 16 or 12, or 437½. For, as I have just said, in the metric system we divide by tens all the way through.

This is no academic statement. At this time there are 437 million people of the 1,600 million people in the world, using the metric system. France, Germany, Italy, and, as a matter of fact, all the civilized countries except the United States and England, are using the metric system.

Where does the opposition to the adoption of the metric system in this country come in? It is chiefly due to the machinery manufacturers who argue that the screws and threads of their machines are cut in terms of the old-fashioned system and that to make the change from old-fashioned to metric units will mean considerable expense. This may be true, but when you live in a town where the street numbers are changed there is expense of changing the street numbers, and we must persuade our brothers of that type that they must make some sacrifice in order to get the metric system going.

I will merely mention in conclusion that I am not here as a solicitor. I merely want to say that the object of the American Metric Association, which was founded last year, is to disseminate knowledge concerning metrics and I will add that we are getting out a lot of very interesting information concerning the subject. If any of the ladies would like to become members, I want to say that information as to membership will be gladly furnished. We want also to get up a children's membership of say fifty cents a year, or even twenty-five cents, to get the youngsters interested. We want to give them these little foot rules and other souvenirs.

In closing, I want to say what I said in the beginning, I do hope you ladies will talk on the subject of the metric system before the women's clubs, and I want to say if anyone wants to write a paper on the metric system for some women's club, I would count it a great privilege to be of some assistance in helping you prepare such a paper.

A vote of thanks was tendered Dr. Arny for his interesting address.

The Committee on Resolutions, by the Chairman, Mrs. Dewoody, offered the report as follows:

RESOLUTIONS.

We, the Women's Section now in session with the A. Ph. A., have had a most enjoyable time, pleasure, profit and inspiration derived from our association and visit that will prove of lasting benefit and a source of happy recollection, and

We do fully realize the care and thought that has been expended upon us and the many things that have been done to complete the sum total of a perfectly good time, and therefore

Be it *Resolved*, That we extend to the local ladies our heartfelt thanks for their unstinted and constant attention to us. We thank them for the delightful functions given for our pleasure, the musical, the automobile ride, the luncheon, all fill a happy place, but above and beyond all this we thank them for the heart-to-heart attitude that has shown forth in the glad hand shake, the sympathic smile and constant alertness to show us a kindness.

We do earnestly thank Mr. Taylor, Mr. Spencer and Mr. Coppock for the splendid music they have rendered and that has added so much to the pleasure of our meetings. We extend thanks to the hotel management for courtesy and attention.

While it is a great joy to meet and renew old friendships, it deepens our sorrow and regret that any should be missing. We mourn the absence of Mrs. Fletcher Howard detained through illness and bow in meek submission that death has taken from our ranks Mrs. Harry B. Mason and Mrs. W. L. Scoville.

Now may we in profound reverence thank the great and loving Father who makes possible these happy reunions—and may we remember,

"Destiny has made us brothers,
No one goes alone;
And what you put into the lives of others
Comes back to you, in your own."

MRS. W. L. DEWOODY,
MRS. ALFRED HUESTED,
MRS. CHAS. HOLZHAUER.

Upon motion of Mrs. C. A. Dye, duly seconded, the report was accepted.

Report of the Committee on President's Address was given by Mrs. J. G. Godding as follows:

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

The Chairman who was appointed was unable to give this matter attention at the time and the Committee has asked me to report. It was only at a late hour that this came to me so that we have not been able to comment thereon as we would wish to do, but the Committee reports most favorably on this splendid address of the President. It is asked that each one study it carefully and ask your husband for the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, that you may watch for the time when the proceedings of these meetings shall be printed, and especially the number that will contain the President's Address. It is recommended that you give careful and earnest attention to the recommendations, and especially that one which speaks of women being so well fitted for pharmacy, and for each and every one of us to try to induce young women seeking work along professional lines to adopt pharmacy. Also, after we have given this careful attention and put in all the work we possibly can, do not forget her closing words, "of the time when this terrible struggle in the world shall be over that we women shall join together to put an end to War."

Mrs. H. M. Whelpley, Chairman of Committee on Nominations, reported the following:

President, Miss Zada M. Cooper, Iowa City, Iowa.
First Vice-President, Mrs. Wm. L. Dewoody, Pine Bluff, Arkansas.
Second Vice-President, Mrs. F. J. Wulling, Minneapolis, Minn.
Third Vice-President, Mrs. F. W. Meissner, La Porte, Indiana.
Secretary-Treasurer, Mrs. H. R. Kenaston, Bonesteel, S. Dakota.
Chairman Executive Committee, Mrs. C. A. Dye, Columbus, Ohio.
General Chairman Membership Committee, Miss Anna Bagley, Columbus, Ohio.

Respectfully submitted,

MRS. H. M. WHELPLEY, *Chairman*,
MRS. E. G. EBERLE,
MRS. O. F. CLAUS,
MRS. E. W. MAY,
MRS. F. H. CARTER.

Upon motion of Mrs. Godding, the report was accepted and the Secretary instructed to cast the ballot for the officers as nominated.

The Secretary announced that the ballot was cast as directed and the President declared the officers elected.

The officers were then installed by Mrs. Godding, who in well-chosen and happy words introduced the elect, vouching for their peculiar fitness for the respective positions to which they were chosen. Brief responses were made and the officers declared duly installed for the ensuing year.

The Secretary called the attention of the Section to the fact that a number of changes in the Constitution and By-Laws had been directed during the interval since same was adopted in 1913. During the year just closed, the Secretary had been directed to have Constitution and By-Laws printed in small booklet form. This could not be done because of necessary changes in wording, etc., to prepare a proper form. After discussion, on motion, duly seconded and carried, the President was asked to appoint a committee to prepare the Constitution and By-Laws and have same printed.

The incoming President and Secretary were named as the committee, namely, Miss Zada Cooper and Mrs. H. R. Kenaston.

In harmony with the spirit of the year, the closing of this meeting was completed by all joining in the song, "America."

(MRS. H. R.) JEAN M'KEE KENASTON, *Secretary*.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

BALTIMORE.

The January meeting of the Baltimore Branch of the American Pharmaceutical Association was held in Harris Hall, University of Maryland, on January 16th, President McKinney presiding.

The reading of the minutes of the previous meeting was omitted.

John C. Muth gave a most interesting talk on the subject of "The Laws Applying to the Sale of Alcohol," presenting the recent rulings of the Internal Revenue Department in a very clear and concise manner. In his talk Mr. Muth pointed out that alcohol produced prior to September 9, 1917, is called Beverage Alcohol and can be sold without any restrictions other than those in force before the Food Control Act became operative; that alcohol produced since September 9, 1917, is called Non-Beverage Alcohol. That in making application to deal in Non-Beverage Alcohol the applicant must file a bond covering three times the number of proof-gallons of alcohol he may have on hand at any one time, at the rate of one dollar a gallon. Liberty Bonds covering the amount may be deposited with the Collector of Internal Revenue. These bonds will be kept in Washington, the coupons being mailed the holder as the interest accrues. A holder of a permit may not sell pure alcohol except to persons holding permits. To others, he may only sell alcohol after it has been medicated according to one of the ten formulas suggested by the Department and in quantities of not exceeding one pint. The medication may not be done in advance, but must be done at the time the order is received. Physicians prescriptions may be compounded with alcohol provided it is so medicated as to render it absolutely unfit for use as a beverage, and the druggists are held responsible as to the sufficiency of the medication. Non-Beverage Alcohol may be used without restriction in the manufacture of U. S. P. or N. F. preparations. When alcohol is used in making other preparations, the manufacturer must file with the Collector certain data, giving the name of the preparation, the percentage of alcohol it contains and a sworn statement that this amount is no more than is necessary for the purposes of solution and preservation; that it is not a beverage or to be used as a beverage. Violations of these and other rulings found in *Treasury Decisions No. 2576*, are punishable by a fine of five thousand dollars or two years imprisonment, or both.

At the close of his address, Mr. Muth was given a rising vote of thanks and the Secretary was instructed to mail an abstract of the address to each member of the Branch.

A letter from the Washington Branch A. Ph. A. suggesting that members of that Branch would like to attend the February meeting of this Branch, was read, and the Secretary was instructed to invite the Washington Branch to this meeting.

Dr. John F. Hancock paid tribute to the memory of Prof. Joseph P. Remington and Mr. Charles Holzhauer, and suggested that a committee be appointed to draft suitable resolutions on the death of these men. A committee consisting of Drs. J. F. Hancock, E. F. Kelly and H. P. Hynson was appointed and the following resolutions were presented and adopted:

Be it Resolved, First, That we learned of the death of Professor Joseph Price Remington with deep regret.

Resolved, That we deeply sympathize with his bereaved family in their great loss.

Resolved, That the Branch do now suspend their business in order to pay appropriate respect to the memory of the lamented deceased.

Resolved, That the Secretary communicate these resolutions to the family of the deceased.

Be it Resolved, First, That we learned with deep regret of the death of Mr. Charles Holz-

hauer, the beloved President of the American Pharmaceutical Association.

Resolved, That we deeply sympathize with his bereaved family in their great loss.

Resolved, That the Branch do now suspend other business in order to pay appropriate respect to the memory of the lamented deceased.

Resolved, That the Secretary communicate these resolutions to the family of the deceased.

The following officers were elected:

President, C. C. Neal.

Vice-President and Chairman of the Executive Committee, Miss E. Grace Lotz.

Secretary-Treasurer, Frontis Lentz.

Member of Council, E. F. Kelly.

Chairman of the Committee on Membership, Charles H. Ware.

Chairman of Committee on Professional Relations, C. L. Meyer.

Chairman of the Committee on the Science and Practice of Pharmacy, H. A. B. Dunning.

Chairman of the Committee on Education and Legislation, Charles Morgan.

F. LENTZ,
Secretary-Treasurer.

CHICAGO.

The ninety-third monthly meeting of the Chicago Branch was held Friday evening, January 25, 1918, at Kuntz-Remmlers Restaurant, with forty members and visitors in attendance.

After dispensing with the reading of the minutes, a verbal report was presented by President Craig, followed by the Secretary-Treasurer's report, which showed that of the 150 members of the Branch, 48 had been in attendance at Branch meetings during the year and that the membership now numbered 165. N. Gray Bartlett and J. F. Fischnar have been lost from membership by death. The Secretary pointed out the need for an increased income in 1918 and recommended the appointment of a budget committee.

Upon motion unanimously adopted, the Executive Committee was instructed to prepare a budget for the expenses of the Branch for 1918 and ways and means to finance it.

The Membership Committee, C. C. Orr, Chairman, reported 29 new members in 1917 and 3 this evening: C. A. Seuring, Frank Ahlborn and Geo. V. Haering.

Mr. Wells reported nothing from the Legislative Committee.

The Committee on Practice, I. A. Becker, Chairman, presented a most interesting report on conservation of sugar and glycerin in pharmacy:

CONSERVATION OF SUGAR AND GLYCERIN IN PHARMACY.

The scarcity of sugar and its importance as a food forced the pharmacists of Germany and its allies early in this war to conserve it to the utmost and to find substitutes wherever possible for pharmaceutical purposes.

The war demands for glycerin also soon caused a scarcity of the raw materials from which it is obtained, thus compelling, early, its limited use, and a search for substitutes.

In England this need was reflected in the action of the General Council of Medical Education, in suspending the several formulas containing glycerin or sugar, or both, from the British Pharmacopoeia, and publishing "War Emergency Formulas" to replace them.

The position of the United States, a general supply depot to the other warring nations, during the greater part of the war, has made the situation serious for us rather early after our joining in the war.

Therefore, it behooves us carefully to consider ways and means for minimizing our consumption of these articles, and their elimination, whenever possible, in preparations they enter.

This subject has been so ably treated in papers just published, or soon appearing, that I need only direct your attention to the more salient features of them, urging you to fully acquaint yourselves with their details at your earliest opportunity.

In a paper appearing in the February 1918 issue of the *Northwestern Druggist*, F. A. Upsher Smith, of St. Paul, treats this subject very ably, confining himself to the U. S. P. preparations: This to be followed by a paper on the N. F. glycerin and sugar-containing preparations.

Mr. Smith recommends a joint A. Ph. A. and N. A. R. D. committee to devise substitute formulas to be placed at the disposal of the U. S. P. Revision Committee, and their adoption urged.

He treats the U. S. P. preparations in what may be called a statistical manner, with recommendations.

Under the caption, "Pharmacy and the War," Editor Eberle, of the A. PH. A. JOURNAL, refers to this subject, in part, thus further emphasizing its importance.

I would call your attention, especially, to the paper of Curt P. Wimmer, read before the New York Branch, December 1917 meeting and published in the January 1918 issue, A. PH. A. JOURNAL, page 39.

Mr. Wimmer made some very fundamental experiments and investigations preparatory to further elaboration of the subject. I wish here to add my hearty endorsement of the suggestions contained in this paper, and for the sake of emphasis, to quote his closing paragraph, as follows:

"Let us not wait until we are asked to do it, but let us be prepared," "In our national emergency don't let us be followers, let us be leaders for the country's good."

(Signed) I. A. BECKER,
Chairman Committee on Practice.

Many samples of galenicals in which glycerin or sugar usually are found, but now made without glycerin or sugar, were shown. These included Bashams' Mixture, *Syrupus Factitious* B. P., *Elixir Simplex*, etc.

A group of preparations, accepted as Official British Sugar and Glycerine Substitutes was prepared by B. L. Eicher, and shown to the members. These preparations consisted of: *Syrupus Factitious, Elixir Simplex, Glycerinum Acidi Carbolici, Glycerinum Acidi Tannici, Glycerinum Amyli, Glycerinum Boracis, Syrupus Aurantii, Syrupus Limonis* and *Syrupus Tolutanus*. Of the whole group, the *Syrupus Factitious* and the *Elixir Simplex* seemed the most desirable, many expressing the thought that it was even a better preparation than our present official elixir with syrup and 25 percent alcohol. The *Syrupus Tolutanus* was also considered first class, the chloroform present undoubtedly adding to its therapeutic value.

The sentiment was general that if the syrups of lemon and orange had been made from the fresh oils rather than the tinctures, the products would have been better. Samples of a syrup substitute using an Irish moss jelly were also shown and proved quite commendable, especially as a vehicle for wild cherry cough preparations.

Wm. Gray showed samples of several elixirs and syrups made without sugar or glycerine; particularly an elixir of terpin hydrate in which the chemical was kept in solution with an equivalent quantity of glacial acetic acid and neither glycerin nor alcohol were used in this elixir.

R. A. Whidden, speaking to the report, stated that tragacanth gum is now very scarce and of poor quality, and its general use by druggists would soon consume the entire supply. He and Adolph Umenhofer strongly objected to the use of the term "substitute" in connection with pharmaceutical preparations. They held that substitution in connection with pharmacy was a term of reproach and ridicule in the public eye and that new and distinctive names should be adopted to designate preparations to be used in place of glycerin and syrup. I. M. Light advanced the argument that sugar and glycerin were not so scarce that their use in essential medicines should be discontinued while they were being extensively used in the manufacture of candy and soda syrups, toilet articles, etc.

President Craig stated that there was a real shortage of both sugar and glycerin, which shortage would become more acutely felt as war continued, but agreed that the use of these articles in the non-essentials should be restricted before the restriction of their use in medicines. He urged a trial of mucilages and a trace of alkali in toilet preparations in place of glycerin and of corn syrup with saccharin if necessary in soda syrups. He also said that in France solutions of certain salts were used in place of glycerin.

Professor W. B. Day: "While conditions to-day do not perhaps warrant the immediate introduction of sugar and glycerin substitutes for use in medicines, yet rapid changes may occur in the food situation and druggists may be suddenly shut off from adequate supplies of sugar and glycerin. We should be prepared to meet such changed conditions when they arise. Therefore I move that the U. S. P. and N. F. Revision Committees be requested to consider the question of the conservation of sugar and glycerin in official preparations against the possibility of a government request that pharmacists curtail the use of these substances in medicine."

This motion was seconded, and after further discussion was submitted to a vote and failed to carry. The report of the committee was adopted, however.

Thos. H. Potts was not present to report for the Publicity Committee, but President Craig pointed out the fine service that *C. R. D. A. News* had given us in announcing the meetings of the Branch, and Wm. Gray moved that the officers of the C. R. D. A. be given a rising vote of thanks This vote was unanimous. The report of the Nominating Committee was presented as follows:

Officers.

President, Hugh Craig.
1st Vice-President, A. H. Clark.
2nd Vice-President, Mrs. A. S. Druehl.
3rd Vice-President, E. Von Hermann.
Council Member, Clyde M. Snow.
Secretary-Treasurer, E. N. Gathercoal.

Committee Chairmen.

Membership, W. B. Day.
Legislation, S. C. Henry.
Practice, I. A. Becker.
Medical Relations, Dr. Bernard Fantus.
Publicity, Thos. H. Potts.

S. C. Henry moved the substitution of the name of James H. Wells in place of S. C. Henry as chairman of the Legislative Committee and the Nominating Committee accepted the substitution. Upon motion of B. L. Eicher and seconded by I. M. Light, the report as amended was adopted and the Secretary was instructed to ballot for the nominees. The Secretary cast the ballot and the Chairman declared the nominees elected.

The Hon. Frank Freericks, of Cincinnati, was then introduced in the President's most eulogistic, yet sincere, manner. Mr. Freericks spoke on the Income and Excess Profits Tax. He distributed copies of Income Tax Return forms and used several charts. The address was given in Mr. Freericks' usual eloquent and yet very clear style and at its conclusion he answered many questions. The address was very warmly applauded and received with numerous expressions of thanks.

E. N. GATHERCOAL,
Secretary.

The ninety-fourth monthly meeting of the Chicago Branch was held Friday evening, February 22, 1918, at Kuntz-Remmlers Restaurant with about 40 members and visitors in attendance.

P. S. Mandabach and J. S. Bellack were received as new members.

Following dinner, the meeting was called to order at 8.30, President Craig presiding.

The reading of the minutes was dispensed with and no routine business was brought before the meeting.

President Craig then introduced Dr. Edward Kremers, who read the paper of the evening, "The Revision of the United States Pharmacopoeia: a Retrospect and a Prospect." The speaker reviewed briefly the history of our national standard, pointing out that ours is one of the first of the national pharmacopoeial standards. He dwelt, somewhat in detail, on the rejection by the A. M. A., in 1876, of Dr. Squibb's suggestion that this national medical body take over the responsibility of revision which had previously been assumed in large part by the editors of the U. S. Dispensatory. Indeed, for a long time, this was the national standard in fact, while the U. S. P. enjoyed the distinction in name only. He also showed how the work of the A. Ph. A. Committee proposed by Dr. Hoffmann and headed by Dr. Rice laid the foundation to the revision of 1880, which resulted in our modern standard.

The principal problems that confront us in the revision of the U. S. Pharmacopoeia are:

1. The question of financing the expert labor required; and, closely associated with this,
2. The frequency of revision; and lastly,
3. The question of representation of the interested professions.

With the call of the next decennial convention, the U. S. Pharmacopoeial revision will have completed its first century of history. The present tendency toward centralization of power in Washington is another reason why pharmacists should not leave the initiative of pharmacopoeial reform to others, least of all to a possible new department in our national government, in the organization of which they may not even have a voice.

Dr. Kremers stated that Government revision, for which abundant research was available, would be more authoritative and could, by a continuous process of revision, quickly eliminate errors and keep the work fully up to date. He suggested that the whole pharmacopoeia might well be printed on cards and that general revision at fixed periods be discontinued.

The discussion, which was very full, divided itself into two general trends—that which endorsed Dr. Kremers' views and that which found more or less objection to them.

Professor R. P. Fischelis expressed the opinion that at present in any of the Government departments that could take charge of this revision, pharmacy would have no voice whatever, and it would not be advisable to turn over the revision until pharmacy had some official recognition by the Government.

PROFESSOR J. A. KOCH: We have a good U. S. P.; no better pharmacopoeia in the world, though many are government-revised. Can the Government better it? Will it be more prompt in giving the revisions? Our

past experience does not so indicate. If pharmacy relinquishes now her right to a prominent position in pharmacopoeial revision, she will never regain such position.

P. A. MANDABACH: The price of the Pharmacopoeia should be reduced. Sixty-seven percent of the drug stores are without a U. S. P., last revision, to-day.

PROFESSOR W. B. DAY: Our Pharmacopoeia is the peer of any of the pharmacopoeias of the world. If pharmacy releases its control of revision, will she have any power in an advisory capacity? Advisory boards are usually helpless; their advice is often not acceptable to the "powers that be." Pharmacy's loss of the U. S. P. will certainly be taken advantage of by medicine and chemistry. But Government control is probably coming and Dr. Kremers has done a great service in presenting this matter to the Chicago Branch. Its consideration is timely. Let us build up pharmacy to a point where its recognition will be inevitable.

MR. S. C. HENRY: It is of the utmost importance that pharmacy should have oversight of pharmaceutical standards and if we need Government aid in the revision, we should initiate the movement, formulate our plans and present them in such an intelligent way that we could secure such assistance and research and still retain the hold of pharmacy in guiding and dictating the revision.

DR. H. M. GORDIN, in a very striking talk, upheld Dr. Kremers' ideas. He disagreed with the point made by Mr. Mandabach, saying that the reason 67 percent of the pharmacists had no pharmacopoeias was not because they couldn't spare the three dollars to buy one, but because they were not sufficiently interested in the book to do so. The retail pharmacist, with few exceptions, knows nothing of the pharmacopoeia and cares nothing for it. It is a public book of standards and could well be prepared by the Government.

PROFESSOR A. H. CLARK: Much is said about the control of the U. S. P. by the pharmacist and what the pharmacist wants in the U. S. P. After all, it is a question of public policy and the U. S. P. should be made in the interests of millions of people all over the country, and not in the interest of some few thousands of pharmacists. If the Government can best serve the interests of all, then it is surely the one to revise the U. S. P. The Government would probably delegate the work to a few men and it has been suggested that under these conditions, self-interested manufacturers, politicians, grafters, etc., would have a hand in it. I feel that there is no more danger of this than under the present system, where a goodly number of the active members of the Revision Committee are manufacturers, and others, who may be interested in various ways. What the U. S. P. needs above all else is continuous, systematic, thorough and efficient research work in order to bring the tests and standards to the highest degree of perfection. Much evidence is found in the various revisions of the book of the lack of this. I feel that the Government could prosecute such work much better than a committee such as we now have. The necessary funds do not seem to be forthcoming from any other source.

By special request, Dr. Fischelis reported on the work of the National Pharmaceutical Service Association.

The University of Illinois School of Pharmacy had on display a complete set of the U. S. P. from 1820 to date, also a set of *Digest of Criticisms* of the U. S. P. and N. F. and of the *Circulars* of the Revision Committee. The display was of much interest to those in attendance.

E. N. GATHERCOAL,
Secretary.

CINCINNATI.

Through error in misreading, in making a typewritten copy, in the office of the JOURNAL, the lecture by Dr. Zeumer, of Parke, Davis & Co., on "The Manufacture, Preparation and Uses of Antitoxins and Serums," before the Cincinnati Branch, A. Ph. A., January 8, 1918, was credited to Prof. Fennel. The report is printed on p. 184 of the February issue; Dr. E. P. Zeumer's name should have been given in this article wherever that of Prof. C. T. P. Fennel occurs.

DENVER.

PROF. JOSEPH P. REMINGTON: AN APPRECIATION.

BY SAMUEL T. HENSEL.

Before presenting the set of resolutions which I have had the honor of being appointed to prepare for the consideration of the Denver Branch of the American Pharmaceutical Association, respecting the death of Prof. Joseph P. Remington, I would ask your kind indulgence while I offer a brief appreciation of this distinguished man.

I do not undertake this as one authorized to speak by virtue of professional association, or through intimate knowledge of his life's work, extended over so many years, but rather as an alumnus of the Philadelphia College of Phar-

macy, the great institution over which he presided with such marked ability and success.

My recollection of Professor Remington carries me back to the days of my youth, when I sat at the feet, respectively, of Prof. John M. Maisch, the profound scholar and distinguished American botanist; of Prof. Edward Parrish, one of the most accomplished pharmacists of his day; and of Prof. Robert Bridges, the eminent physicist and chemist, the American editor of "Fowne's Chemistry," an English work well known to the pharmacists of that period.

The last year of my attendance at college, Professor Remington became an assistant to Professor Parrish, and stood, so to speak, upon the very threshold of his career.

When he first entered the classroom, the impression I received was that of a strikingly handsome, dignified and highly intellectual young man.

He immediately gained the admiration, confidence and love of the student body by reason of his kindly helpfulness and enthusiasm, qualities which he retained through life.

His interest in the future of graduates, who went forth into the world as alumni and representatives of their Alma Mater, was undiminished to the very last. This spirit breathed in every word he ever wrote to the members of the Alumni Association.

When in August 1912, the American Pharmaceutical Association held its annual meeting for the second time in the city of Denver, arrangements were immediately made for the mid-week meeting of the Alumni Association of the Philadelphia College of Pharmacy.

The meeting, held in the Magnolia Room of the Albany Hotel, was presided over by Professor Remington, as were nearly all pharmaceutical gatherings when "Remington," as the boys fondly called him, was available.

And there was a reason for this, for Professor Remington could always be depended upon to do the right thing in the right way and at the very nick of time.

The gathering on this occasion was a notable one, composed of a large number of the leading lights of the pharmaceutical world.

One by one these were called upon, and each speaker seemed to furnish added inspiration to his successor, the result being a series of the most beautiful tributes of respect.

Professor Sayre, of the University of Kansas, had just ceased speaking, and I had been carried back in memory to the days of my boyhood, when I was aroused from my reverie and almost stupefied, as I heard my name called; for Professor Remington had stated, a short time before, that owing to the large attendance it would be necessary to depart from the usual custom of calling upon every alumnus, therefore, he would confine himself to a few.

I rose in my place with no idea of what I was going to say, but as I stood up an incident of the classroom flashed across my mind, and I was thus saved from complete discomfiture and furnished with the introduction to my remarks.

I said that my embarrassment in being called upon was akin to that of Professor Parrish at the delivery of his lecture on "The Application of Heat to Pharmaceutical Processes."

He was describing the "Bunsen" burner, explaining its theory, construction and application. He showed wherein it differed from the ordinary gas jet. The "Bunsen" flame was non-luminous and intensely hot, while the ordinary gas jet was luminous. The luminosity of the gas jet was due to very minute particles of unconsumed carbon which, as they approached the heated zone of the flame, became incandescent, thereby causing light.

In the case of the Bunsen burner, its construction is so arranged as to provide for the admission of a large body of air, four-fifths of which is known to be oxygen; this in turn combines with the carbon of the gas immediately to form carbon monoxide, which is a non-luminous flame, representing all of the heat calories of the gas employed.

He went on to tell how it could be demonstrated that the luminosity of the gas jet was due to unconsumed carbon. If, said he, we rotate a plate over a flame, there will be immediately observed a deposit of carbon.

The similar rotation of a porcelain plate over the Bunsen burner results in no discoloration.

To demonstrate that the black deposit is carbon, he said that if we now rotate the blackened plate over the Bunsen burner, we shall find that the blackened surface will disappear. This is due, he explained, to the fact that the carbon on the plate combines with the oxygen of the air and burns from the porcelain surface.

For some reason or other, whether from atmospheric influences, decomposition products, or the character of the gas coming from the burner, the experiment was not a success.

Professor Parrish was a most excellent talker and very resourceful. He kept rotating the plate over the non-luminous flame, turning it over to look at it from time to time, and discovering that it was a failure, he skilfully shifted his remarks, along with the plate, and began talking upon some related subject.

The boys who had followed his lucid description of the rationale of what was to have been a striking experiment, stood the strain for a few minutes longer and then broke into a simultaneous roar of laughter. Professor Parrish, after a moment of evident embarrassment, in his most charming manner, smilingly said: "Well, for some reason the demonstration is not a success to-day, but it can be done, under proper conditions."

After I had finished the recital of this incident of the classroom, Professor Remington rose and in his irresistibly humorous vein said: "Well, we've got it on the boys now. Whenever we give that lecture we provide ourselves with two plates, one with the carbon deposit, and the other blank; by skilful manipulation, the experiment never fails."

When we come to consider the activities of Joseph P. Remington as Ex-President of the American Pharmaceutical Association, Ex-Chairman of the Council of that body, Chairman of the Committee of Revision of the United States Pharmacopoeia, Editor of the United States Dispensatory, Author of the famous "Theory and Practice of Pharmacy," Dean of the Philadelphia College of Pharmacy, we get an insight into the working capacity of a great man.

His labors as Chairman, Editor, Author and Dean of a great educational institution alone represents a prodigious amount of work, which could have been accomplished only by the exercise of the most careful, orderly and systematized methods.

The magnitude of this work did not permit him to wait for the inspiration of the divine afflatus. "Duty" stood ever at his elbow, urging him on to the achievement of a life-work that must ever remain as an example of the highest order of well-directed effort, which will be held in grateful remembrance not only by his contemporaries, but likewise by the pharmacists of the future.

DETROIT.

A joint meeting of the Detroit Branch of the American Pharmaceutical Association and the Prescott Club of the University of Michigan, held at Ann Arbor, February 14, proved to be one of the most interesting of the year. A special car left Detroit at three o'clock with about thirty-five enthusiastic Detroit members aboard. The delegation was met at the University by Dr. Kraemer, professor of pharmacognosy. Assisted by Prof. Glover, Secretary of the College of Pharmacy, Dr. Kraemer conducted the visitors through the pharmacy and chemistry laboratories. One of the many interesting displays shown was the collection of materials from which the official selections for the last three United States Pharmacopoeias were made.

An excellent dinner was enjoyed at the Michigan Union, with Dr. Kraemer as host.

The delegation was honored by the presence of Dr. Hutchins, president of the University of Michigan, who, after a short address of welcome to the visitors, by Dr. Kraemer, spoke of his appreciation of the efforts of the American Pharmaceutical Association to obtain proper recognition for the profession. Both speakers paid high tribute to the memory of Dr. Prescott, in whose honor the Prescott Club was organized. C. F. Mann, treasurer of the Detroit Branch of the American Pharmaceutical Association, expressed the gratification felt by the Detroit representatives for the hearty welcome received, and having known Dr. Prescott personally, spoke of the wonderful character of the latter. He also voiced the sorrow of the Branch on account of the absence of Dr. Stevens and the sympathy of the organization for him in his recent bereavement.

The joint meeting of the two organizations was called to order by the president of the Prescott Club. "Paraffin Films and Oil Dressings for Treatment of Wounds and Burns," being a topic of keen interest at the present time, the talk and demonstrations given by Wm. Bonisteel were followed very closely. The Carrel-Dakin Solution is also attracting quite a lot of attention and Mr. Wagner, in presenting "Technique Employed in Making Carrel-Dakin Solution," aroused considerable discussion.

H. B. McWilliams showed very clearly the two sides of present pharmacy, the ethical and the commercial views, pointing out, that as a profession, the ethical side must predom-

inate. As defendants of each side were present, heated discussion followed.

The speakers were members of the Prescott Club, but the Detroit representatives were very active in the discussions.

After the meeting adjourned, refreshments were served, and a short social period enjoyed. Then the special car traveled swiftly to Detroit, being delayed only once, while a freight train of numberless cars held the crossing. But the hope that they were all coal cars prevented even murmurs against the delay, and soon the February meeting was a decidedly successful event of the past.

The March meeting also promises to be very interesting. Mr. Wendell, Display Manager of the J. L. Hudson Co., will discuss window displays and the methods of obtaining the best results. All Detroit pharmacists are acquainted with the successful exhibits of this company. Owing to the inclement weather at the time of the January meeting, Dr. Lescohier, who was scheduled for that meeting, will give a talk at the March meeting on "Biological Preparations, Serums, Antitoxins, Vaccines, etc.'" Since the biological preparations of Parke, Davis & Co. are so well known, Dr. Lescohier will be given a hearty welcome.

M. STRAWN,
Secretary.

NASHVILLE.

A joint meeting of the Nashville Branch of the American Pharmaceutical Association and the Nashville Drug Club was held Thursday, February 21st, D. J. Kuhn presiding.

Postmaster E. S Shannon, of Nashville, was introduced and made a strong appeal to the members present to assist in the Government's Thrift Stamp campaign, asking them to become agents of the first class and thus help in this worthy cause. There was a general expression of willingness to assist in this work.

President H. L. Sperry, of the Morris Bank, was next introduced and explained the methods of this bank. He stated that 85 percent of the money loaned by this bank was to those who needed money because of sickness and that therefore a large portion loaned by this institution went to the druggists and doctors. He explained that druggists could frequently collect debts by assisting their debtors to negotiate loans which could be paid back in small installments. Mr. Sperry also stated that druggists had an opportunity to act as agents for the bank and also as collectors of the payments that were to be made on the installment plan.

On motion of W. R. White, a War Service Committee was appointed, consisting of Messrs. S. C. Davis, D. S. Sanders and H. A. Buchi, this committee to represent the two associations in matters that required the cooperation of the druggists with the public and Government.

D. S. Sanders spoke on the subject of "How to Obtain a License to Sell Explosives." He dwelt upon the responsibility that rests upon druggists in selling explosives and poisons.

W. R. WHITE, *Secretary.*

NEW YORK.

The February 1918 meeting of the New York Branch of the American Pharmaceutical Association was called to order by President Mayer in the lecture hall of the New York College of Pharmacy on Monday, the 11th, at 8.30 P.M.

Seventy-five members were present.

The minutes of the January meeting were read and approved.

The Treasurer submitted his report which showed a balance of $209.25 on hand.

Member of the Council.—Professor Hostmann sent word that it was impossible for him to be present and therefore no report was received.

Membership Committee.—The names of five new members were presented for membership in the parent association: Albert B. Muller, 2482 Valentine Ave., N. Y. City.; H. B. Shattuck, 31 East 17th St., N. Y. City; Frank Parker, 51 West 37th St., N. Y. City; Eugene Katz, 895 West End Ave., N. Y. City; Marmelo Patola, 353 First St., Jersey City, N. J.

The Secretary was directed to follow the usual course with regard to these applications.

Legislation and Education.—Mr. Lehman brought in a very comprehensive report dwelling especially on the new explosive requirements. He also announced that the following members would serve with him on the Committee of Legislation and Education: Fred Nitardy, Hugo Kantrowitz, Jeannot Hostmann, Jacob H. Rehfuss.

Mr. Robert S. Lehman's report, after some discussion, was accepted.

Fraternal Relations.—In the absence of Dr. J. Leon Lascoff no report was received.

Progress of Pharmacy.—Dr. Diekman brought in an elaborate report discussing, among others, the following subjects: Bacteria in Fungi, Toxic Value of Arsenates, Iodide of Starch in Treatment of Affected Wounds, Cattle Foods and Substitutes, Calcium Cyanamide as Fertilizer, War Emergency Formulas, Simulation of Disease, etc., and Its Detection.

Dr. Diekman's report was received with considerable applause, which, after discussion, was ordered accepted.

It was now moved, seconded and carried that the Local Branch request the President of the Parent Organization to take such steps as are necessary to bring about the required research work, to determine substitute formulas of pharmaceuticals, etc., which would cause the saving in products needed in the present war or which at present are rare.

The Special Committee on By-Laws reported that no formal meeting of this committee was held and therefore no report could be brought in.

Dr. Hugo Kantrowitz presented an appreciation of Charles Caspari, Jr., by the A. Ph. A. It was moved, seconded and carried that this be made a part of our minutes. (See under Council Business.)

Dr. Robert P. Fischelis now read a paper on the Edmonds Bill and the work of the National Pharmaceutical Service Association. He was followed by Col. E. E. Persons, Commander of the American Ambulance Service at Allentown, Pa., who gave an informal "talk" of the organization of that service. Major H. Sheridan Beketel, M.R.C., next gave a talk on the methods of the Army Medical Supply Depot, and the efficient work carried on by them.

These papers were followed by a very interesting discussion. A rising vote of thanks was then extended to the speakers and to Caswell A. Mayo, who had assisted in arranging the program.

Upon motion it was then voted to adjourn.

(Signed) HUGO H. SCHAEFER,
Secretary.

NORTHWESTERN.

The Northwestern Branch of the American Pharmaceutical Association met in conjunction with the Scientific and Practical Section of the Minnesota State Pharmaceutical Association at 1.30 P.M., February 7th, in the West Hotel, Minneapolis, Minnesota. Dr. F. J. Wulling, chairman of the scientific section of the state association, convened the meeting. The following program of the scientific section was carried out:

1. "A Practical Problem," by Gustav J. Demars.

2. "Hints to Success," by Max Menzel.

3. A brief address by President M. L. Burton, of the University of Minnesota.

4. "War Emergency Formulas"—Suggestion for changes in the preparations of the U. S. P. and N. F. for the conservation of glycerin, sugar and alcohol; a symposium to be opened by Mr. F. A. U. Smith.

5. "Behind the Prescription Counter," by Rasmus Bartleson.

6. "Venereal Diseases"—a symposium to be opened by Dr. Chas. E. Smith, Jr.

7. "The Biologic Assay of Digitalis Produced in the Medicinal Plant Garden, College of Pharmacy, University of Minnesota, 1917," by E. L. Newcomb and Chas. H. Rogers; read by Dr. Newcomb.

8. "A Method for Cleaning Digitalis, with a Study of the Inorganic Constituents," by Chas. H. Rogers and E. L. Newcomb; read by Dr. Rogers.

9. Report of the Chairman of the Committee on Adulterations, by Gustav Bachman.

10. "The Advent of Pharmacists to St. Paul," by Herman Rietzke.

11. "The College of Pharmacy of the University of Minnesota (continued from 1917)," by F. J. Wulling.

The committee appointed to formulate suitable resolutions on the demise of the late President Charles Holzhauer and Professor Charles Caspari, Jr., submitted the following:

REPORT OF THE COMMITTEE APPOINTED TO FORMULATE SUITABLE RESOLUTIONS ON THE DEMISE OF THE LATE PRESIDENT CHARLES HOLZHAUER AND PROFESSOR CHARLES CASPARI, JR.

WHEREAS, By the will of Divine Providence our devoted friends and fellow co-workers, Charles Holzhauer and Charles Caspari, Jr., have been taken from our midst at a time when their counsel and advice were so valuable; and

WHEREAS, We, the members of the Northwestern Branch of the American Pharmaceutical association, deeply feel the sad loss of such staunch friends, capable, willing and talented workers for the betterment and advancement of pharmacy, devoid of selfish interests, always sacrificing self for the good and betterment of their fellow-men, and per-

sistent thinkers and workers to place pharmacy on the highest plane possible; and

WHEREAS, We further wish to acquaint their friends and families of the high regard in which they were held and the great loss which we feel the pharmaceutical profession has sustained through their sudden demise, now, therefore be it

Resolved, That we give expression of our deep heartfelt sorrow at their untimely death, our high appreciation of the many sterling qualities that bound them to us on all occasions and at all times, and our sincere sympathy to their families and to all those who mourn their loss; and be it further

Resolved, That a copy of these resolutions be spread upon the records of the Northwestern Branch of the American Pharmaceutical Association and that a copy of the same be forwarded to their families.

F. J. WULLING,
Chairman.

A motion was made, seconded, and unanimously carried to include Professor Remington's name in the resolution.

The following officers were elected for the year 1918:

President, C. H. Bollinger, St. Paul; *Vice-President*, Gustav Bachman, Minneapolis; *Secretary and Treasurer*, C. H. Rogers, Minneapolis; *Members of the Executive Committee*, Stewart Gamble, Minneapolis; Wm. A. Frost, St. Paul; Wm. A. Abbott, Duluth; E. E. Tupper, Minneapolis.

CHAS. H. ROGERS,
Secretary.

PHILADELPHIA.

The January meeting of the Philadelphia Branch of the American Pharmaceutical Association was annulled out of respect to the memory of the late Professor Joseph Price Remington.

On Saturday evening, January 12th, a special meeting of the Local Branch was called by the president, Ambrose Hunsberger, at his home, 1600 Spruce Street. The meeting was hurriedly convened to honor Secretary Henry, of the N. A. R. D. On account of the uncertainty of Mr. Henry's stay in Philadelphia, it was impossible to notify the entire membership, in consequence of which the gathering was not large. After discussing at some length all matters pharmaceutical, the company partook of refreshments generously furnished by the host of the evening. President Hunsberger, acting as toastmaster, deftly explained the purport of the meeting when he graciously presented to Mr. Henry, on behalf of the Local Branch, an engraved silver loving cup. It bore upon it an inscription of the appreciation of the Branch of Secretary Henry's good services to the pharmaceutical profession. Mr. Henry's response was most sincere and aptly worded. President-elect LaWall, of the American Pharmaceutical Association also expressed the sentiments of those present when he said that Philadelphia's loss of Secretary Henry's services was compensated for in the knowledge that he would still be serving pharmacy and in a larger way. Other speakers were E. G. Eberle, O. W. Osterlund, E. G. Allen, W. E. Supplee, R. P. Fischelis, R. H. Lackey, Otto Kraus and Ivor Griffith.

The February meeting of the Philadelphia Branch of the American Pharmaceutical Association was held at the Philadelphia College of Pharmacy on Tuesday evening, February 5th, with the president, Ambrose Hunsberger, in the chair. Prof. Charles H. LaWall opened the scientific program with an excellent paper on the subject of "Colloids." The Professor's paper comprehensively treated the difficult subject and rendered a pleasing and understandable survey of this new field of physical science. Counter experiments added to the value and interesting character of the paper. It is seldom the privilege of listeners to have such an apparently scientific and abstruse matter placed before them in such a lucid and interesting manner. The devious ways in which colloidal bodies play their part in pharmacy were enumerated and explained. Professors Stroup and Gershenfeld participated in a discussion of this paper.

President Hunsberger then requested W. L. Cliffe to assume the chair temporarily, and read his paper on "Practical Drug Conservation," in which he revealed a number of practical suggestions for the sensible saving of drug supplies which are daily becoming more scarce. Mr. Hunsberger did not favor a radical change of formulas in order to conserve such products as alcohol, glycerin and sugar. A more feasible way, according to the speaker, was to have each pharmacist take the matter up with the neighborhood physicians and ask their coöperation in this matter of conservation. This was the opportune time for the pharmacist to display his ability to render assistance to the prescribing physician by suggesting new formulas, etc. The speaker re-

cited instances where he had done this with gratifying results to himself as well as the physician. He also pointed out that there were several liquid pharmaceuticals which contained an excess of either one of the previously named products and suggested that considerable conservation might be accomplished by cutting down the quantities where legally and ethically permissible. Mr. Hunsberger pointed out as a concrete example that if it were possible to have physicians all through the country to stop prescribing "elixir of terpin hydrate" and to use capsules in its place several tons of glycerin and alcohol might be conserved each day. Ways of saving containers by eliminating odd sizes, etc., were also mentioned.

Mr. Hunsberger's paper was fully discussed by Professors Cook, Fischelis, LaWall and Gershenfeld, Messrs. E. G. Eberle, W. L. Cliffe, W. McNeary and Ivor Griffith.

Professor Cook placed a motion before the branch authorizing the President to nominate a committee of three to study this matter of drug conservation and present a comprehensive report at the next meeting. The motion was duly seconded and carried. The Branch then went on record as giving its full endorsement to the Edmonds' Bill soon to come before Congress.

The meeting was attended by more than fifty persons.

IVOR GRIFFITH,
Secretary.

COUNCIL BUSINESS

A. PH. A. COUNCIL LETTER NO. 11.

PHILADELPHIA, February 6, 1918.

To the Members of the Council:

Motion No. 17 (*Approval of Membership of Committee on Research*) and *Motion No. 18* (*Election of Members; applications Nos. 63 to 68 inclusive*) have each received a majority of affirmative votes.

F. Lentz, Secretary-Treasurer of the Baltimore Branch writes that: "I beg to advise that at the last meeting of the Baltimore Branch of the American Pharmaceutical Association, held January sixteenth, Dr. E. Frank Kelly, of 302 Edgevale Road, Baltimore, was elected a member of the Council of the American Pharmaceutical Association to represent this Branch for a term of three years."

The following Tentative Program for the Sixty-sixth Annual Meeting of the Association to be held at Chicago during the week of August 12th to 17th inclusive, is submitted by the Committee on Program, the General Secretary, Secretary of the Council and Local Secretary. Comments and suggestions are invited.

TENTATIVE PROGRAM.

Monday.

9.30 A.M. National Association Boards of Pharmacy.
2.00 P.M. National Association Boards of Pharmacy.
American Conference of Pharmaceutical Faculties.
8.00 P.M. National Association Boards of Pharmacy.
American Conference of Pharmaceutical Faculties.

Tuesday.

9.30 A.M. National Association Boards of Pharmacy.
American Conference of Pharmaceutical Faculties.
2.00 P.M. Joint Session of National Association Boards of Pharmacy.
American Conference of Pharmaceutical Faculties and Section on Education and Legislation.
7.00 P.M. Council Meeting.
8.00 P.M. First General Session of Association.

Wednesday.

9.30 A.M. Scientific Section, first session.
Section on Education and Legislation, second session.
Women's Section, first session.
12.30 P.M. Alumni Luncheons.
2.00 P.M. Commercial Section, first session.
Section on Practical Pharmacy and Dispensing, first session.
7.00 P.M. Council Meeting.
8.30 P.M. President's Reception.

Thursday.

9.30 A.M. Section on Education and Legislation, third session.
Commercial Section, second session.
Historical Section, first session.

2.00 P.M. Section on Practical Pharmacy and Dispensing, second session.
Scientific Section, second session.
Women's Section, second session.
7.00 P.M. Council Meeting.
8.00 P.M. Second General Session of Association.

Friday.

9.30 A.M. Scientific Section, third session.
Section on Practical Pharmacy and Dispensing, third session.
2.00 P.M. House of Delegates.
4.00 P.M. Entertainment.

Saturday.

9.00 A.M. Council Meeting.
10.00 A.M. Final General Session of Association.

Motion No. 19 (Election of Members). You are requested to vote on the following applications for membership:

No. 69. Benjamin Greenblatt, 209 So. Madison St., Iowa City, Iowa, rec. by W. J. Teeters and R. A. Kuever.
No. 70. Henry Emil Zutz, 673 N. Dale St., St. Paul, Minn., rec. by Wm. B. Day and F. J. Wulling.
No. 71. A. C. Herting, 3504 Federal St., Camden, N. J., rec. by E. G. Eberle and J. W. England.
No. 72. Robert Litson Gaddy, Woodruff, S. C., rec. by H. M. Whelpley and J. W. England.
No. 73. John Northrup Cole, 50 Golden Gate Ave., San Francisco, Cal., rec. by J. L. Lengfeld and Wm. B. Day.
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No. 75. Drexel W. Haines, 134 Douglas Ave., Freeport, Ill., rec. by E. G. Eberle and W. B. Day.
No. 76. Lionel T. Andrews, 3917 Syvsset St., Woodhaven, L. I., rec. by Charles H. LaWall and Charles S. Herron.
No. 77. Emiliano Delgado y Valdes, Salud n° 60 bajos (Laboratorio), Havana, Cuba, rec. by J. G. Diaz and Jose P. Alacan.
No. 78. Carl A. Seuring, 1501 E. 67th St., Chicago, Ill., rec. by Charles Orr and Clyde M. Snow.
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No. 82. Haig Bedros Yardumian, 48 Montgomery St., Boston, Mass., rec. by Bagdasar Goolkasian and Wm. B. Day.
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J. W. ENGLAND, *Secretary.*
415 N. 33RD STREET.

CHARLES CASPARI, JUNIOR.

1850–1917.

AN APPRECIATION BY THE AMERICAN PHARMACEUTICAL ASSOCIATION.

For the loyal and unselfish devotion of more than half of the years of his active manhood to the editing of its publications; for the twenty-three years of careful and conscientious service as its Secretary; for his helpful attentions and courtesies to its officers and members, the American Pharmaceutical Association desires, through a duly authorized committee, to make full and ample acknowledgment to his family, to pharmacy and to the world.

The Association would also give expression to the deep sorrow the death of Dr. Caspari brought to all its members who knew him and would pay just tribute to his unusual abilities, broad attainments, sterling character and pure life.

To such an end and for the purposes therein stated, the foregoing is most respectfully offered.

(Signed) H. P. HYNSON, *Chairman.*
JOHN C. MUTH,
GEORGE M. BERINGER,
CASWELL A. MAYO,
J. H. BEAL.

January 30, 1918.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON THE UNITED STATES PHARMACOPOEIA.

It is with much interest and satisfaction that the members of this Committee have perused the pages of the new U. S. Pharmacopoeia and have noted the various comments thereon that have appeared from time to time in the pharmaceutical press.

We are very glad to note that comments and reviews as have appeared are on the whole kindly and that this Ninth Revision continues to maintain for the U. S. P. the foremost position among the pharmacopoeias of the world.

With the increase in the magnitude of the work of revision, the time required must necessarily be greater and, owing to the rapid growth of our materia medica, it would seem that a revision at less remote intervals or at least a supplement would be desirable.

The admissions to the U. S. P. on the whole seem to be well chosen and conservative. Regret is expressed by some members of the medical profession that acetyl salicylic acid was not included in this list. Concerning the deletions there is a greater difference of opinion. Most physicians dislike to have a remedy that they are accustomed to use dropped from the official list, and such deletions do not seem to us to add to the usefulness and purpose of the U. S. P.

In the short time at the disposal of the Committee this year it has been impossible to cover seriatim the entire scope of the new book. The Committee does not desire to make any general or specific recommendations at this time. The following observations, however, have been made by the members and are hereby recorded for future reference.

NOMENCLATURE.

That the botanical names employed in the Pharmacopoeia should be in accord with the best knowledge and the best usage of botanists goes without saying. An article has been recently published by Mr. O. A. Farwell in the *Druggists Circular* for April 1917, criticising in detail the botanical nomenclature of the U. S. P. IX. Mr. Farwell's work has been done with intelligence and thoroughness, the majority of his criticisms pointing out needed changes. His article is timely and should open the way for more extended remarks and some lively discussions among the botanists.

It seems particularly unfortunate that the Pharmacopoeia should for any real or fancied reason adopt titles that may lead to confusion or to depart from an established custom as has been done in the following instances:

Ferri et Quininae Citras U. S. P. IX is entirely different from the *Ferri et Quininae Citras* of the U. S. P. VIII.

Ferri Phosphas U. S. P. IX is not really ferric phosphate and tends to confuse the ferric phosphate of the pharmacist with the ferric phosphate of the chemist.

Cascara Sagrada U. S. P. IX. What is the precedent for this change?

VEGETABLE DRUGS.

The following errors have been noted:

Cascara Sagrada. In the description of the sections (second paragraph, third line) the stone cells are described as being in the outer bark. They are usually considered as being in the middle bark, the cork being considered the outer bark.

Foeniculum. In the description of the sections (second paragraph, tenth line) the two vitae are on the commissural surface and not on the dorsal surfaces as stated.

Viburnum Prunifolium. The drug should be defined as the dried bark of the root since that is the article subsequently defined.

ASSAY PROCESSES.

We are pleased to note that the assay processes both organic and inorganic have been greatly improved and extended. The following points have come to our notice:

Acetonum. To insure accuracy, should read, "Partially fill with distilled water a stoppered weighing bottle and note the exact tare; then introduce about 1 mil of acetone, stopper and weigh accurately."

Acidum Aceticum Glaciale. In the assay the directions should read, "Introduce into a stoppered weighing bottle about 10 mils of distilled water and take the exact tare of the whole, add about 2.5 mils of glacial acetic acid and weigh accurately, etc." The text calls for simply a "tared flask" to which 10 mils of distilled water (weight deduced presumably from its measure and the stopper) comes in as an afterthought apparently.

Acidum Hydrochloricum and **Acidum Nitricum.** Comments similar to those under *Acidum Aceticum Glaciale* apply equally well to these.

Acidum Citricum. This is distinctly an efflorescent substance although the pharmacopoeias generally describe it as "permanent in the air" or at most as efflorescent at temperatures above 30° C. As long as it remains in translucent crystals it may be regarded as uneffloresced but when in powder this cannot be assumed and we know that the crystals in time become quite opaque from efflorescence unless kept in well closed containers. In the assay, therefore, the sample should always be rendered anhydrous before weighing, by drying at 100° C. to constant weight. The assay will then show in the dried salt not less than 99.5 percent of $C_6H_8O_7$. Each mil of normal potassium hydroxide V. S. will correspond to 0.06402 Gm. of $C_6H_8O_7$ and each Gm. of the dried acid will correspond to 15.56 mils of normal potassium hydroxide, V. S. (if pure, 15.62 mils).

Acidum Sulphuricum. After mixing 1 volume of the acid with 50 of distilled water, is it necessary to cool the mixture before titrating?

Acidum Sulphuricum Aromaticum. It has been shown that the use of a reflux condenser in the preparation of a sample for assay is a mistake. The proper procedure is to add to the acid three times its volume of distilled water and heat in an uncovered beaker on a boiling water bath for four hours to effect hydrolysis of the ester present. Titration will then show correctly the quantity of sulphuric acid originally present. The results obtained from the assay in the text are much too low.

Aconitum. Dr. H. Engelhardt points out that the assay processes for both the fluidextract and solid extract and possibly the tincture should be thoroughly revised, it being impossible to obtain concordant results when using cochineal as indicator. Methyl orange appears to give better results. A detailed report is forthcoming.

Alkaloids and Alkaloidal Drugs. In a few instances a rubric is given for the alkaloids and alkaloidal salts. This might well be extended to all of them since it is a well-known fact that many contain an excess of water and, etc. It is becoming more and more imperative to qualitatively examine the alkaloidal residues obtained in the assay of galenical preparations. Some attention to this is advocated for the U. S. P. X.

In several of the assay processes of the U. S. P. IX for fluidextracts and tinctures, purified oak sawdust is employed. This oak sawdust is not so easily obtained as one without experience might imagine. Dr. A. B. Lyons suggests that cheese cloth is a convenient substitute easily obtained and easily manipulated.

Alumen. Under the assay process the surprising statement is made that "the aluminum oxide obtained corresponds to not less than 99.5 percent of alum assayed." The meaning is that the aluminum oxide obtained corresponds to $AlNH(SO_4)_2 + 12H_2O$ or $AlK(SO_4)_2 + 12H_2O$ as the case may be, equal in weight to 99.5 percent of the alum taken for the assay.

Alumen Exsiccatum. Although it is required that the label state whether it is potassium or ammonium alum from which the exsiccated product is made, there is no intimation that one differs materially from the other. It requires that not more than 2.5 percent of the dried alum be insoluble in water. Of course if made from potash alum it would be wholly soluble. There seems to be no reason why an allowance of 3.5 percent for impurities should be made in case a potassium alum is used. Query: Does the insoluble residue consist of Al_2O_3? If so, it should be strongly ignited before weighing. Then since the aluminum oxide constitutes something like 20 percent of the salt, the amount of impurity indicated will be much greater than seems to have been assumed in preparing the article on Exsiccated Alum.

Ammonii Carbonas. In the assay the reading should be, "Put into a stoppered weighing bottle about 10 mils of distilled water, ascertain the exact tare; add about 2 Gm. unaltered, translucent ammonium carbonate and weigh accurately. When the salt is dissolved, transfer the solution to a "suitable beaker or flask with the aid of about 40 mils of distilled water, add 50 mils of normal sulphuric acid, V. S., and titrate the excess of acid with normal potassium hydroxide, V. S. using methyl orange T. S. as indicator."

Aqua Ammoniae Fortior. It would be well to require that a stoppered weighing bottle be used in weighing the sample for assay, as in the case of water of ammonia, 10 percent.

Bismuth Salts. The method for the estimation of the bismuth oxide in these is a rather crude one. A convenient electrolytic method would be acceptable.

Caffeina Citrata. In the third line from the bottom of the assay, insert before "Citrated Caffeine" the word "dried."

Caffeinae Sodio-Benzoas. In the assay for sodium benzoate the statement should be made that "each mil of half-normal sulphuric acid V. S. used corresponds to 0.07202 Gm. of $NaC_7H_5O_2$. Each Gm. of the dried mixture corresponds to not less than 6.94 nor more than 9.50 mils of half-normal sulphuric acid V. S." Note that in the assay of sodium benzoate, p. 383, the salt is dried at 110° C., while in this case the drying is done at 80° C.

Hydrargyri Iodidum Rubrum. Only the electrolytic method is given. An alternate method would be acceptable.

Liquor Cresolis Compositus. A method for the assay of this preparation is needed, especially a method for the estimation of the amount of water in the product.

Liquor Potassii Hydroxidi. There is something puzzling about the expression at the top of page 253: "The solution shows not more than 5.5 percent of alkalinity calculated as KOH (carbonate)." The word "carbonate" should be deleted or else explained. As a matter of fact this test should form part of the assay process, which should be so performed as to show the presence of not less than 4.5 percent of KOH, and to limit the total alkali, including the carbonate, to the equivalent of 5.5 percent. This comment applies equally to *liquor sodii hydroxidi.*

Opium and its Preparations. A reduction in the amount of slaked lime used in the assay would seem feasible.

Resina Jalapae. In the determination of the solubility of the resin in chloroform and in ether, no account is taken of the amount likely to be absorbed by the filter paper. The evaporation of an aliquot part would give more concordant results.

Spiritus Ammoniae Aromaticus. An assay process is desirable since an appreciable loss of ammonia is liable to occur during the manufacturing process.

Tinctura Iodi. The heating of the evaporated tincture until the free iodine is expelled is liable to produce losses. It is much simpler to convert the iodine into halide by thiosulphate or preferably sulphite, titrating the total amount of halide, etc.

Zincum. In the electrolytic estimation of zinc it is recommended to use a nickel dish or a platinum dish upon which a thin layer of silver or copper has been previously deposited. Dr. H. Engelhardt points out that a mercury cathode cup gives just as good results and is even more rapid than the nickel dish method.

BIOLOGICAL ASSAYS.

The value of these has been officially recognized for the first time in the U. S. P. IX. This is a move in the right direction, but it is very unfortunate that the only compulsory standard, that of cannabis, should lack the essence of standardization, namely a standard for comparison. Why not have the United States Public Health Service establish the standard here as in the case of antitoxins?

PREPARATIONS.

But little comment on these is believed to be justifiable at this time.

Collodium Flexile. Some doubt is expressed as to the advisability of the substitution of camphor for Canada balsam.

Emplastrum Plumbi. Some experiments have indicated that it requires about five hours' boiling to complete the reaction in this preparation. Since constant stirring with a wooden spatula is also one of the requirements, this formula is not likely to become popular with the retail pharmacist nor to stimulate in him an interest in manufacturing pharmacy.

Unguentum Iodi. Although this ointment is not to be dispensed unless it has been recently prepared, a rapid absorption of the iodine takes place and experiments with vehicles other than lard are suggested.

EFFLORESCENT SALTS.

In the case of a considerable number of more or less efflorescent salts the new Pharmacopoeia has abandoned the principle of the "Rubric of Purity," heretofore consistently followed in dealing with nearly all mineral salts, and has established new standards essentially fallacious. The

fallacy depends upon the fact that assay processes are prescribed for such salts without requiring that they be rendered anhydrous, or at least that they be brought to a definite condition of hydration before the sample taken for assay is weighed.

The list of salts to which this criticism applies includes the following which will be discussed seriatim: Copper sulphate, ferrous sulphate, magnesium sulphate, sodium sulphate, zinc sulphate, sodium acetate, sodium arsenate, sodium borate, sodium phenolsulphonate, sodium phosphate, sodium thiosulphate, lead acetate, zinc acetate, zinc phenolsulphonate, zinc valerate, and potassium and sodium tartrate.

Cupri Sulphas. Crystallized copper sulphate, which is the official salt, contains 5 molecules of water of crystallization. Exposed to dry air at ordinary temperature, it loses by efflorescence 2 H_2O; at 100° C. the total loss amounts to 4 or 5 molecules of water leaving a monohydrated salt. It is in this condition that a sample should be weighed for assay, if a definite rubric is to be fixed. Instead the U. S. P. IX starts with the salt in the condition in which it happens to be. It may contain hygroscopic moisture or on the other hand it may have lost a part of its water of crystallization. The apparent "impurity" (calculating the salt as $CuSO_4 + 5H_2O$) may be high including water (hygroscopic) or it may be low (even a minus quantity), owing to loss of water of crystallization. The Pharmacopoeia determines in the sample taken, not $CuSO_4 + 5H_2O$ but simply $CuSO_4$ and proceeds to deduce a rubric standard. The salt contains, it says, not less than 62.97 percent of $CuSO_4$ corresponding to not less than 98.5 percent of the crystallized salt. One infers that this permits a maximum of 1.5 percent "impurity" in the salt. The fallacy becomes apparent when we attempt to reason in a similar manner from the maximum (66.79 percent) amount of $CuSO_4$ that may be permitted, since this would correspond with 104.48 percent of $CuSO_4 + 5H_2O$, showing a minus impurity of 4.48 percent. In fact, the assay has told us nothing about the presence of fixed impurities in the salt. In order to make this clear suppose that a sample of copper sulphate containing 0.5 percent of fixed impurity has lost by efflorescence 2 percent of water, the assay will show the presence of apparently 101.5 percent of $CuSO_4 + 5H_2O$. Or, suppose that a salt containing 2 percent of fixed impurities has lost by efflorescence 1 percent of water. Assay will show apparently nearly 99 percent purity.

Clearly the assay is of no value as a criterion of the real purity of the sample. It seems only to show whether or not the salt conforms to an arbitrary fixed standard whose significance is uncertain. It would be far more rational to make the requirement depend upon the amount of residual H_2O in the salt. A sample dried to constant weight at 110° C. must lose not less than —nor more than—of its weight. However, the only scientific plan is to establish as usual a rubric of purity and provide an assay process for determining the degree of purity, then if necessary there may be also provided a limit of permissible efflorescence.

The assay would then be made as follows: "Dissolve about 1 Gm. of copper sulphate, previously dried to constant weight at 110° C. (a tentative figure) and accurately weighed, in 50 mils of distilled water, add 4 mils of acetic acid and 3 Gm. of potassium iodide, and titrate the liberated iodine with tenth-normal sodium thiosulphate, V. S., starch T. S. being used as indicator. It shows in the dried salt not less than 99.5 percent of $CuSO_4 + H_2O$. Each mil of tenth-normal sodium thiosulphate, V. S., corresponds to 0.017766 Gm. of $CuSO_4 + H_2O$. Each Gm. of dried copper sulphate corresponds to not less than 56.00 mils of tenth-normal sodium thiosulphate V. S." If we wish to limit the permissible amount of efflorescence, direct to "weigh accurately about 1 Gm. of the copper sulphate and dry it to constant weight at 110° C. It loses not less than 9 percent of its original weight." It is doubtful however if multiplying the requirements of this kind is expedient. In the case of copper sulphate it seems particularly unnecessary to resort to a quantitative standard. If the official salt is in the form of crystals, as it may well be, efflorescence shows itself at once by a striking change in color. Only uneffloresced crystals should be dispensed. Even in preparing Fehling's solution, the official directions are merely to use "carefully selected small crystals of cupric sulphate" (Cupri Sulphas, U. S. P.) though, perhaps, a method of standardization would be desirable here; posological considerations, however, do not demand greater exactness than can be secured by attention to the physical properties of the salt.

Ferri Sulphas. The facts regarding this salt are closely analogous to those regarding copper sulphate. Its crystals have a distinctive color, strikingly changed by efflorescence. It loses all but one molecule of its water of crystallization at a temperature not much above 100° C. It differs from the copper salt in that it tends to absorb oxygen, while the latter is subjected rather to a partial deoxidation. The analysis of ferrous sulphate for fixed impurities, providing oxida-

tion has not taken place, may be made exactly as in the case of copper sulphate, and the description excludes an oxidized salt. The dried salt retains one molecule of water having, therefore, a molecular weight of 169.93.

The directions for the assay would be: "Dissolve about 0.6 Gm. of ferrous sulphate, previously dried to constant weight at 115° C. and accurately weighed, in about 25 mils of diluted sulphuric acid and titrate with tenth-normal potassium permanganate V. S. until a permanent pink color is produced. It shows not less than 99.5 percent of $FeSO_4 + H_2O$. Each mil of tenth-normal potassium permanganate, V. S., corresponds to 0.016993 Gm. of $FeSO_4 + H_2O$; each Gm. of the dried salt corresponds to not less than 58.5535 mils (100 percent = 58.8478)." (Of course, any ferric salt would be included in the impurities thus determined.) It hardly seems necessary to add a quantitative test for loss of water by efflorescence. The statement in the text (first paragraph of fine print) is sufficient.

Note that in the Dried Ferrous Sulphate no attempt is made to ascertain the "purity" of the salt. The granulated salt is of necessity free from such fixed impurity but should be freshly prepared.

Magnesii Sulphas. Here again we have a salt whose crystals when heated to 150° C. lose all but one molecule of their water of crystallization. The suggested assay would be: "Dissolve about 0.6 Gm. of magnesium sulphate, previously dried to constant weight at 150° C., in 100 mils of distilled water, etc." (See U. S. P., p. 265.) "The weight of magnesium pyrophosphate obtained corresponds to $MgSO_4 + H_2O$ amounting to not less than 99.5 percent of the weight of the dried salt taken for assay. Each Gm. of the dried salt corresponds to not less than 0.80057 Gm. of magnesium pyrophosphate (pure = 0.80459). Each Gm. of magnesium pyrophosphate corresponds to 1.118583 Gm. of $MgSO_4 + H_2O$." The question of what degree of purity should be required for magnesium sulphate is open for discussion. The B. P. permits of 2.3 percent impurity which certainly seems large. The U. S. P. VIII permitted only 0.3 percent which certainly is too stringent. German and Swiss Pharmacopoeias provide a dried magnesium sulphate containing 23.69 percent of water, corresponding approximately to the formula $MgSO_4 + 2H_2O$. This is to be dispensed whenever magnesium sulphate in powder is required. Although this plan seems preferable to the requirement that the salt shall not have lost by efflorescence more than a certain percent of water (to be ascertained by a time-consuming quantitative operation), it does not seem advisable to confuse retail dealers with an alternative form of magnesium sulphate which they are to remember to dispense in place of the familiar epsom salt. It is to be remembered that this is a drug most frequently self-prescribed and sold very commonly in rural districts by persons not professional pharmacists. All things considered, it seems sufficient to describe the official salt as consisting of "crystals which are translucent" and add that "if they have become opaque by efflorescence they should not be employed for any pharmaceutical use, except after recrystallization." If any limit is to be prescribed for the permissible amount of efflorescence, the determination should be made by drying a sample of the salt at a temperature of 150° C., when the loss in weight should be not less than, say, 8 percent.

Sodii Sulphas. This salt effloresces very rapidly in dry air. Moreover the proportion of water of crystallization it contains (10 molecules = 55.91 percent) is very large. Since it loses the whole of this water by drying at 100° C., determination of absolute purity in the salt is a simple enough matter. A purity rubric of 99 percent in the anhydrous salt is, perhaps, reasonable and should be described as follows: "Assay: Dissolve about 0.5 Gm. of sodium sulphate, previously dried to constant weight at 120° C. and accurately weighed, in 100 mils of distilled water, and etc.," following the language of the text, but making the statement that "it indicates in the dried salt not less than 99 percent of Na_2SO_4. One Gm. of $BaSO_4$ = 0.60859 Gm. Na_2SO_4. One Gm. of dried sodium sulphate = 1.6267 Gm. $BaSO_4$ (pure = 1.64313 Gm.). The comments above on Magnesium Sulphate apply more pertinently to Glauber's salt which is not now often prescribed for human patients. The maintaining of a limit of permissible efflorescence seems to be wholly impracticable. Of course, the direct determination of the residual water, by drying the sample to constant weight, is much to be preferred to the determination of the sulphuric radical as now proposed in the Pharmacopoeia. It would be better to make the completely effloresced salt official if it is found that this is not too hygroscopic. In such case a dried salt of definite composition, having little tendency to absorb or give up water, might be substituted for the dehydrated salt, just as in the U. S. P. VIII ordinary crystallized sodium carbonate was replaced by the more

permanent monohydrated variety. It is to be noted that the German and Swiss Pharmacopoeias have a dried sodium sulphate (similar to dried magnesium sulphate).

Zinci Sulphas. This salt is similar in constitution and behavior to the sulphates of iron (ferrous) and magnesium. A rubric of purity should be provided, and the assay should be made on a sample, dried to constant weight at 120° C. before weighing, having, therefore, the composition of $ZnSO_4 + H_2O$. This yields in the assay an amount of ZnO corresponding to 99.5 percent of $ZnSO_4 + H_2O$ in the dried salt. One Gm. ZnO = 2.2054 Gm. of $ZnSO_4 + H_2O$. One Gm. $ZnSO_4$ dried = 0.45116 Gm. ZnO (pure = 0.453426). The comments under magnesium sulphate apply to zinc sulphate.

Potassii et Sodii Tartras. It is doubtful if this salt is sufficiently efflorescent to make it necessary to provide a limit of permissible water of crystallization. It occurs in the market, however, most commonly in the form of powder which is recognized as official. For assay, transparent crystals (powdered and pressed between folds of filter paper) may be weighed without further drying. The powder cannot be dealt with quite as satisfactorily. It may be recrystallized, it is true, but in doing so a considerable amount of the impurities will be left behind in the mother liquid. The alternative is a cautious drying of the salt to constant weight at a temperature raised gradually to 215° C., being careful not to carbonize it to any degree. Probably the desiccation can be facilitated by adding repeatedly small quantities of alcohol. Assuming that a satisfactory way can be found to accomplish the desiccation without injuring the organic salt, the further procedure for determining the purity of the salt will be obvious. If we are to rely upon weighing the transparent crystals as $KNaC_4H_4O_6 + 4H_2O$, the assay will be conducted as in the text, but the statement will be: "It shows not less than 99 percent of $KNaC_4H_4O_6 + 4H_2O$. Each mil of half-normal sulphuric acid, V. S., used corresponds to 0.07055 Gm. of $KNaC_4H_4O_6 + 4H_2O$. Each Gm. of potassium and sodium tartrate corresponds to not less than 14.033 mils of half-normal sulphuric acid (pure = 14.1743 Gm.)."

Sodii Arsenas. This salt loses the whole of its water of crystallization (40.41 percent) at 150° C. It should be thus dried to constant weight before weighing to determine purity. For the assay take about 0.3 Gm. of the dried salt accurately weighed. The statement will be: "It shows not less than 98 percent of Na_2HAsO_4 in the dried salt. Each mil of tenth-normal sodium thiosulphate, V. S., used corresponds to 0.009298 Gm. of Na_2HAsO_4. Each Gm. of dried sodium arsenate corresponds to not less than 105.39 mils of tenth-normal sodium thiosulphate, V. S. (pure = 107.544 mils)." It does not seem necessary to fix a limit of permissible efflorescence for this salt. The description calls for the uneffloresced salt (transparent) which is to be preserved in well closed containers. Then, if a product assumably uniform in strength is desired, we find provided the exsiccated salt. It is really not desirable that both of these forms should be official, one nearly double the strength of the other. The dried salt is the one that should be retained. As long as there are two, errors in dosage are sure to occur. It is interesting to note that the International Pharmaceutical Congress adopted $Na_2HAsO_4 + 7H_2O$ as sodium arsenate.

Sodii Acetas. At 120° C. it loses all of its water of crystallization (39.72 percent). The salt should be dried accordingly before weighing. It shows not less than 99 percent of $NaC_2H_3O_2$ in the dried salt, etc. Each mil of dried sodium acetate corresponds to not less than 24.14 mils of half-normal sulphuric acid (pure = 24.384 mils). (If any efflorescence limit is prescribed it may well be required merely that the salt lose, in drying to constant weight at 120° C., not less than 32 percent of its weight.) The description of the official salt should include only colorless transparent crystals. Then if the salt is preserved in well-closed containers it will not effloresce sufficiently to affect the dosage materially.

Sodii Boras. When dried thoroughly and the residue heated to redness it becomes anhydrous, losing, if pure, 47.14 percent of water. Instead of reducing the salt to an anhydrous condition before weighing a portion for assay, it is better to powder about 15 Gm. of the sample and weigh out separately two portions, one of about 5 Gm. the other of about 1 Gm., both to be weighed accurately. Dry the smaller portion and heat it to the point of igneous fusion. From the loss in weight of this sample, determine the weight of the larger sample in anhydrous condition. Use this portion for the assay as directed in the text, changing the reading to: "It shows in the anhydrous condition not less than 99 percent(?) of $Na_2B_4O_7$. Each Gm. of sodium borate (weighed

in anhydrous condition) corresponds to not less than 9.704 mils of normal hydrochloric acid V. S. (if pure, 9.802 mils.) Preferably, take for the assay about 1 Gm. of the undried salt, and use for the titration tenth-normal hydrochloric acid. The equivalent for 1 Gm. of the fused salt will then be 97.04 mils of the volumetric acid. As limit of efflorescence, 1 Gm. of the salt when dried and heated to fusion must lose not less than 40 percent (42 percent) of its weight. Only colorless crystals should be official. In such cases it should suffice merely to require that the salt be kept in well-closed containers.

Sodii Phenolsulphonas. Dried at 120° C. the salt loses the whole of its water of crystallization (15.52 percent if pure). It should be thus dried before it is weighed for assay. It shows in the dried salt not less than 99 per cent of $NaC_6H_5O.SO_3$. Each Gm. of dried sodium phenolsulphonate corresponds to not less than 201.93 mils of tenth-normal bromine, V. S. (if pure, 203.97 mils). The official salt should consist of colorless transparent crystals and then if kept in well-closed containers it should not lose water sufficiently to affect the dosage.

Sodii Phosphas. This is really a very efflorescent salt. For assay as to purity, it may be dried to constant weight at 110° C. (if pure it loses 60.35 percent). Weigh about 0.2 Gm. of the dried salt and proceed as in the text. It shows in the dried salt not less than 98 percent of Na_2HPO_4. Each Gm. of the dried salt corresponds to not less than 206.97 mils of tenth-normal silver nitrate, V. S. (if pure, 211.19 mils). The official salt must consist of clear crystals showing not more than traces of efflorescence. The effloresced salt is not to be dispensed unless first recrystallized.

Sodii Phosphas Exsiccatus. "It is a poor rule that does not work both ways," says the proverb. Sodium phosphate is keen to get rid of its water of crystallization. Equally eager is the exsiccated salt to attract to itself moisture from the air. In this case the U. S. P. IX requires that the former salt shall not be gratified in its self-abnegation beyond a certain narrow limit. In the other no objection is made to the acquisition of the water by the exsiccated salt, except that interposed by a well-closed container. However, there would seem to be a better plan than that of providing two forms of sodium phosphate so diametrically opposed in their behavior. There is an intermediate phosphate containing 7 molecules of water instead of twelve that is satisfied with its allotment of that compound. Why not make this one the official compound? Perhaps the simplest plan would be to dry the ordinary crystals until they had lost approximately 25 percent (25.145 percent) of their weight, requiring that when further dried to constant weight this salt shall lose approximately 47 percent (47.03 percent) of its weight. The assay for the determination of the purity would be the same as that for the present official salt and, for that matter, for the exsiccated sodium phosphate as well.

Sodii Thiosulphas. The crystallized salt when pure contains 36.29 percent of water of crystallization. Whether it can be brought to the anhydrous condition without decomposition is doubtful, but, if so, it is an easy matter to determine the purity of the sample by drying and titrating the residue with tenth-normal iodine, V. S.

If the plan of drying to constant weight is impracticable, the salt can still be brought to the form of sulphate and its weight compared with the theoretical yield of that salt. Only crystals should be official. These, when kept in well-closed containers in a cool place, are not liable to change materially.

Plumbi Acetas. It is stated that lead acetate loses its water at 40° C.; whether it also loses some acetic acid is not stated. Precaution would have to be taken against absorption of CO_2 if dehydration of the crystals should be attempted. Granted that this is practicable, the assay of the present text may serve for the determination of purity of the salt (rubric). The dehydrated salt being used, it shows in the dried salt not less than 99.5 percent (rather rigid) of $Pb(C_2H_3O_2)_2$. Each Gm. of the dried salt corresponds to not less than 61.20 mils of tenth-normal oxalic acid, V. S. (if pure 61.51 mils). The description calls for crystals of crystalline masses. If the crystals are transparent or translucent, showing not more than traces of efflorescence (or required to) and dissolve in recently boiled distilled water to a clear, or a most slightly opalescent solution, it seems hardly necessary to fix a limit of permissible efflorescence. It should be noted that the assay assumes complete solubility of the sample since the solution is not filtered before adding the oxalic acid, V. S.

If carbonate is present it counts in the assay as acetate. This is why care must be taken in drying the sample to exclude CO_2.

Zinci Acetas. The salt is somewhat unstable as shown by its acetous odor. It is doubtful whether it can be deprived of its water of crystallization without material loss of acetic acid. The assay may be based upon the uneffloresced crystals, the salt being recrystallized if necessary. The water of crystallization is only 16.42 percent so that it hardly seems necessary to establish a maximum of permissible efflorescence. An article which is in uneffloresced crystals and conforms to the description given should be satisfactory. If the crystals have effloresced, the salt may be recrystallized from water containing some acetic acid.

Zinci Phenolsulphonas. The salt is said to give up the whole of its water of crystallization at 125° C. (25.94 percent, if pure). If the dried salt is used for assay, the amount of zinc oxide obtained corresponds to not less than 99.5 percent of the dried salt. Each Gm. of the dried salt corresponds to not less than 0.1967 Gm. of ZnO (0.1977, if pure). The salt should be used in uneffloresced condition. A standard of admissible efflorescence is not advisable, but it would be well in this case as in similar cases to ascertain what quantity of water the salt will normally lose under ordinary conditions, and, if necessary, make the official salt a "dried" salt not liable to undergo much change if kept under ordinary conditions.

Zinci Valeras. It is noticeable in the case of this salt that nothing is said about drying the sample before weighing. There is an obvious reason for this but if the assay is to mean anything, the official salt should at least always be in the crystallized form, and it would seem that under the circumstances (possible presence of notable quantity of moisture) a requirement of the equivalent of 99 percent of the crystalline salt is too stringent. An arbitrary requirement like this may be made but it does not call for a 99 percent "purity" of the salt.

SUMMARY.

The method of dealing with efflorescent salts adopted in the U. S. P. IX is faulty in several particulars.

I.—It appears to supply for such salt a rubric of purity but in fact does nothing of the kind. The words "Corresponding to not less than—percent of the crystallized salt" should in each instance be deleted as false and misleading. With this change the text furnishes a standard of "strength," which possibly is better than none.

II.—The exact limit for permissible loss of water of crystallization by efflorescence may seem in theory a desirable thing; in practice it can accomplish little good, while it is liable to abuse in the hands of over-zealous inspectors. The permitted loss in each case is approximately 5 percent so that a general statement in the introductory notices of the U. S. P. similar to that with regard to limitation of hygroscopic moisture (page xlvi near the bottom) would suffice.

III.—There seems to be a better plan. In nearly every case if the official salt is in crystalline form the efflorescence is readily discernable and it is easy to declare that only the uneffloresced salt is to be dispensed (or a salt showing not more than traces of incipient efflorescence).

IV.—In the exceptional cases where efflorescence is rapid and results in loss of more than 5 percent of the weight of the salt a different plan must be adopted. It may be that the salt can be induced to crystallize with a smaller proportion of water of crystallization, showing in that form a little or no tendency to effloresce. We have already substituted in the U. S. P. the monohydrated salt for the exceedingly efflorescent crystals of ordinary sodium carbonate, a capital improvement. It is possible that a sodium phosphate containing only seven molecules of water of crystallization may with equal advantage replace the present official salt.

V.—However that may be, it is certainly possible to substitute for the troublesome efflorescent salt the already effloresced salt. Of course, it would be necessary to fix a standard to which manufacturers would have to make their product conform. Such product would undergo but little change if kept in well-closed containers. Some of the European pharmacopoeias have made official a "dried salt" to be employed in the place of the crystals in mixtures in powdered form, *e. g.*, *Natrium Sulphuricum Siccum* and *Magnesium Sulphuricum Siccum* of the German Pharmacopoeia. Of course, the dried salt is very much stronger than the crystals, so that the one should not be substituted for the other, Gm. for Gm. This would not solve our problem, indeed, we have already exsiccated forms of sodium phosphate and ferrous sulphate but these again do not fill the bill. The exsiccated sodium phosphate, for example, is as greedy to absorb moisture as the crystallized is eager to part with it. The suggestion of an effloresced salt to take the place of both the other forms is at least worthy of consideration.

VI.—Finally there should be provided for each of the salts in question a true "Purity Rubric."

DELIQUESCENT SALTS.

Calcii Chloridum. A purity rubric for this salt is wanting. The only requirement is that "the salt without previous drying shall show the presence of not less than 75 percent of $CaCl_2$." The salt is described as "very deliquescent" and yet it is required to show on assay more $CaCl_2$ than it would contain if but one percent of hygroscopic moisture were present, the salt otherwise consisting of pure $CaCl_2 + 2H_2O$. A better requirement is that of the British Pharmacopoeia, *viz.*, "when dried at 200° C. the salt shall lose not more than 5 percent of moisture." Preferably establish a purity rubric perhaps of 99 percent. For the assay direct that the salt be dried at 200° C. before weighing, every precaution being taken to prevent absorption of moisture during the weighing. Proceed as in the text but the statement will read: "It shows in the dried salt not less than 99 percent of $CaCl_2 + 2H_2O$. Each mil of tenth-normal silver nitrate, V. S., corresponds to 0.007351 Gm. of $CaCl_2 + 2H_2O$ and each Gm. of calcium chloride corresponds to not less than 134.68 mils of tenth-normal silver nitrate, V. S. (if pure, 136.036 mils)." (Include also test like the B. P. limiting hygroscopic moisture.)

Calcii Bromidum. This case is closely analogous to that of calcium chloride, except that a somewhat larger percentage of impurity (presumably chloride) has to be tolerated. Probably a rubric of 98.5 percent would be reasonable. Then the assay would be conducted as in the case of calcium chloride, drying the salt at 200° C. before weighing. Then, "the assay will show in the dried salt not less than 98.5 percent of $CaBr_2 + 2H_2O$. Each mil of tenth-normal silver nitrate, V.S., corresponds to 0.011797 Gm. of $CaBr_2 + 2H_2O$. Each Gm. of calcium bromide corresponds to not less than 83.495 mils nor more than 85.536 mils of tenth-normal silver nitrate V. S. (if pure, 84.767 mils). (Also when dried to constant weight at 200° C. the salt loses not more than 4 percent(?) of hygroscopic moisture.)

Lithii Bromidum. It is very doubtful if it is practicable to dry this salt without loss of bromine. If it is, a rubric of purity may be fixed as in the case of calcium chloride, otherwise we may be contented with merely determining the percentage of lithium bromide as in the text, but only extraordinary precautions will prevent further absorption of moisture so that the salt will sooner or later fail to fulfil the U. S. P. requirement. Note that the text permits the presence of nearly 1 molecule of water (one molecule = 17.18 percent).

Zinci Chloridum. A purity rubric is perhaps impracticable owing to the tendency of this salt to form oxychloride. The present assay may, therefore, be accepted as sufficiently safeguarding the purity of the product. Possibly 95 percent is too high a requirement. At all events it is evident that care must be exercised in selecting a fair sample for weighing. Instead of taking 0.3 Gm. as the text prescribes, we should start with a much larger sample, not less than 2.5 Gm., of which, after dissolving and making up to a definite volume, an aliquot corresponding to 0.3 Gm. of the original sample may be taken for assay.

MISCELLANEOUS COMMENTS.

Ammonii Iodidum. It is stated in the text that the salt soon becomes yellow or yellowish brown on exposure to air and light, but nothing is said of its unfitness for use in this condition, or of any remedy. It would seem that merely drying it at a temperature of 110° C. should render it fit for dispensing.

Antimonii et Potassii Tartras. The salt is efflorescent, therefore it should be rendered anhydrous for the assay by drying it to constant weight at 110° C. The dried salt shows not less than $98^1/_2$ percent(?) $K(SbO)C_4H_4O_6$. Each mil of tenth-normal iodine, V. S., is equal to 0.016167 Gm. of $K(SbO)C_4H_4O_6$. One Gm. of the dried salt requires 60.93 mils of tenth-normal iodine, V. S. (if pure, 61.856 mils).

Ferri et Ammonii Citras. In this and in the next item, the description "Ferric citrate rendered more readily soluble by the presence of ammonium citrate" is objected to. It seems hardly true to say that the product is ferric citrate when it is really a chemical compound (no doubt), of which ferric citrate is a constituent. It is true that the new compound is more soluble (in water) than ferric citrate alone and that pharmaceutically this gives it an advantage over the less soluble salt, but the definition is surely faulty—still more so in the case of *ferri et ammonii citras*, where the term "iron citrate" is used instead of ferric citrate. Is not iron and quinine citrate in itself a chemical individual, which is converted into a more soluble group by the further combination with ammonium citrate?

Ferri Phosphas. The comments on *Ferri et Ammonii Citras* apply equally well here.

Zingiber. It would be advisable to refer to the pages in the Pharmacopoeia where the special method for determining non-volatile extracts are given.

Tinctura Zingiberis. The following criticisms have been received: The requirements for tincture of ginger are open to the following criticisms: First, contrary to pharmacopoeial usage in case of fluid preparations, the assay is based on a weighed instead of a measured quantity of the tincture. Ten mils, rather than 10 Gm. of the tincture should be taken and the weight of the residue should not exceed 0.165 Gm. (corresponding closely enough with 2 percent). Second, a minimum requirement as to extractive is at least as important as a maximum, for reasons quite obvious. Third, the expression "when treated with 20 mils of cold distilled water" is too vague. The directions should be to "stir the residue with a glass rod during five minutes with 20 mils (or 16 mils as the case might be) of cold distilled water. Decant the water into an evaporating dish and rinse the residue with two mils of distilled water without further stirring. Evaporate to dryness and dry to constant weight at 100° C. or, perhaps better, dry the residue once more and determine the loss." Twenty percent, is suggested as a more reasonable allowance than fifteen in any case. Perhaps after all a requirement that 90 percent of the alcoholic extract should be soluble in ether would probably be more to the point than the requirement as to water solubility.

CAUTIONS AGAINST INJURIOUS EFFECTS OF PHARMACOPOEIAL ARTICLES.

Dr. A. B. Lyons submits the following comments: The Pharmacopoeia deals with many poisonous and corrosive substances. Is it in place to point out the dangerous properties of drugs? It seems only right that a book like this should keep before the minds of those who use it the distinction between active poisons and drugs of little potency. The former should surely be kept by themselves under lock and key and this should be specifically required in each instance. Such a practice is recommended in a number of the pharmacopoeias of other countries and should be universal. Our pharmacopoeia avoids mention of the word "poison." It does not even indicate the maximum permissable dose of such a potent agent as strychnine, an omission not less than criminal.

It does now and then, however, print in italics a cautionary sentence interpolated usually in the descriptive paragraph. Under Phosphorus, for example, it is stated that the drug *"has a distinctive and disagreeable odor and taste but should not be tasted except in very dilute solution."* Italics are those of the text. (Imagine a greenhorn taking a bite of phosphorus to find out how it tastes!) Mention is made of the spontaneous ignition of phosphorus on long exposure to the air and instructions are given to preserve the drug under water in strong well-closed containers in a secure and moderately cool place, but the words are not italicized or given prominence in any way. One would look for some such expressions standing out conspicuously on the page as "dangerously poisonous" or "exceedingly poisonous and extremely inflammable, liable to spontaneous ignition if not kept under water, producing burns exceedingly painful and difficult to heal." We find under Sodium Arsenate, "great caution must be used in tasting it and then only in very dilute solution." (Will someone please parse that sentence?) There is, however, no word of caution under Arsenic Trioxide or even under Solution of Potassium Arsenite.

It is said of Phenol (not italicized) that when undiluted it cauterizes the skin and mucous membrane, language which fails to convey an adequate warning against the deadly effects of this insidious poison.

There are cautions against carelessness in handling calcium hypophosphite and other hypophosphites and so with potassium chlorate where italics are used, but nothing is said of the reaction with strong mineral acids; potassium permanganate "when in solution or in the dry condition must not be brought into contact with organic or other readily oxidizable substances." The idea seems to be merely that the permanganate would be decomposed, with no suggestion of anything like an explosion.

The scope of my criticism is that cautionary expressions are employed in rather a haphazard way. They should be reduced to a system. My idea is to have a definite place under each title for a statement regarding the poisonous character of the drug (if poisonous) characterizing it as: "An exceedingly potent poison," "an active poison," or "a poison," and in each case, preferably inserting a descriptive adjective as "narcotic," "irritant," "corrosive," etc.

The introductory notices should define the uses of the terms "potent" and "active." Similarly, I would, when necessary, introduce a cautionary note with regard to any special care required in handling the article. This naturally would come in connection with the directions "in well-closed containers," etc.

L. D. HAVENHILL, *Chairman.*

EDITORIAL NOTES

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Editorial Office: 253 Bourse Building, Philadelphia, Pa.

HEARING ON THE EDMONDS BILL.

We have been advised by Congressman George W. Edmonds that a hearing would be had on the Edmonds Bill nest Tuesday, March 19th, at 10.30 A.M. It is to be hoped that the result of this hearing will prove entirely satisfactory, although it must be admitted that from certain sources there is opposition, which possibly may be overcome, or not of sufficient strength to impede action on this much-needed measure.

FAIRCHILD SCHOLARSHIP EXAMINATION TO BE HELD JUNE 25, 1918.

THE AWARD THIS YEAR TO BE MADE TO A GRADUATE PHARMACIST.

The Fairchild Scholarship Committee has named June 25, 1918, as the date for holding the Fairchild Scholarship Examinations. The award this year is to be made to a graduate pharmacist. It is the desire to determine how the award of the Fairchild Scholarship can serve to the greatest advantage of pharmacy and when this has been determined the Scholarship will be awarded each year on that basis. Schools of pharmacy are asked to make the announcement in the class-rooms and through other means of publicity. The Scholarship is to be awarded to a student of one of the Conference schools.

RECONSTRUCTION PROBLEMS.

A DRUG TRADE COUNCIL.

It is very evident that the thought of federation of various drug industries is a topic of discussion not only in this country but also in Great Britain. Reference has heretofore been made editorially relative to the address of President C. A. Hill, of the British Pharmaceutical Conference, in which he outlines a plan of federation and this subject is discussed in the *Chemist and Druggist* for February 2, 1918, on pages 43 and 44, and is quoted in full:

"There exists at the present time no one body which can speak with authority for the whole of the (British) drug trade. There are times, however, when it is desirable that some representative body should be able to place the views of the drug trade as a whole before Government Departments or when such a body should be available to be consulted by the Government when any step in legislation affecting the drug trade is being taken. The Pharmaceutical Society of Great Britain and the Pharmaceutical Society of Ireland may be taken to represent retail chemists; the Drug Club, wholesale druggists; the Proprietary Articles Trade Association, a section of the makers of proprietary articles; the Pharmaceutical Committees (imperfectly federated in the Local Associations Executive) and the General Council of Panel Chemists (Scotland), the interests of panel chemists; the British Pharmaceutical Conference, the scientific side of the drug trade; the Society of Chemist-Opticians and Chemists' Dental Society, those sections of the trade interested in optics and dental work; the Public Pharmacists' and Dispensers' Association, those dispensing in public institutions; the Chemists' Assistants' Association, the interests of assistants; and over 200 Associations, some of which are federated, local interests. No one of these bodies can, however, give an authoritative opinion on a matter affecting the whole trade.

There have been occasions when such an opinion was required, and there will be many in the near future. As an example may be quoted the difficulties that arose in regard to the proposals for the abatement of duty on medical spirits where the medical men's and dispensers' views only were placed before Parliament with the consequence that the effect had to be modified afterwards by inter-Departmental conferences.

Mr. C. A. Hill, the President of the British Pharmaceutical Conference, in his address at the July meeting last year emphasized the need of what he designated a Public Policy Committee which could coördinate, and amalgamate the views of the craft as a whole. It will be remembered also that in what is known as the Whitley Report of the Sub-

Committee on the relations between employers and employed the formation was urged of Joint Standing Industrial Councils representing each trade. Among the questions which it is proposed that these Councils should undertake are those of technical education and training, industrial research, and the consideration of legislation affecting the industry. There has recently been instituted an Industrial Reconstruction Council for the purpose of assisting trades to form the representative bodies referred to, so that it may be taken that the Government is in earnest in this matter. We know that the need has already been felt for a representative body which can be called in for consultation. We hazard the opinion also that the absence of such a Council in the past is perhaps one of the reasons why the Government appears constantly to disregard the views of any one of the Societies representing sections of the drug trade. The difficulty arises at once that the Pharmaceutical Society, which has been provided with a handsome income by the State, takes a narrow view of its responsibilities and is extremely jealous of any other body which may appear to encroach on its preserves. But for these characteristics the matter would have been easy of accomplishment. As it is, it is not unlikely that the Ministry of Reconstruction will require to take in hand the organization of the drug trade. It would be much better, however, if the initiative came from within. The starting point is the formation of a real Federation of Local Associations and of Pharmaceutical Committees. Some parts of the country are already federated areas of Local Associations and a reconstituted so-called Local Associations Executive Committee could be made really to represent the Pharmaceutical Committees from which it draws the money which pays the Committee's expenses. These bodies and the Pharmaceutical Societies would appoint members representing retail chemists to the Drug-trade Council and the wholesale druggists represented in the Drug Club and the Association of Wholesale Druggists could arrange delegates to represent their section. The Whitley Report to which we have referred is largely concerned about the relations between employers and employed, and for this reason the various Chemists' Assistants' Associations would need federating and representing on the Trade Council.

We understand that the Industrial Reconstruction Council is willing to assist in bringing together the different elements of a trade and to arrange a meeting. There will in the near future be many problems for the Trade Councils to solve, and those trades will suffer which are not in a position to represent their views to the Government. It is necessary first to consider what bodies should be represented on the Council and the manner of the election of delegates.

We have not attempted to give a complete list of representative Societies and Associations, but the test in this case is that the Association represents definite interests of persons connected with the drug trade. Looking still further forward in this matter of State recognition, to the formation of a representative Upper House in the Parliamentary system of this country, it is probable that the drug trade would be in a position through its Council to claim a seat there, and thus ensure that the views of the drug trade would be heard in legislative proposals—a far better idea than spending money in the attempt to obtain the election to the House of Commons of representatives of sectional interests.

PROSPECTIVE PHARMACY STUDENTS SHOULD NOT UNNECESSARILY NEGLECT THEIR OPPORTUNITIES AT SCHOOL.

Dr. Claxton, United States Commissioner of Education, has said that "no student should leave college now and none should leave for war service but every man should remain until definitely called. When the Government wants him it will call him."

The leading reason for this statement is that according to the views of Dr. Claxton the war will be a long one. Four whole classes of doctors have simply dropped out of this generation in European countries because of their enlistment. That which applies to medicine is also applicable in a degree to pharmacy. While, of course, there is no intention to keep any one from doing his duty as a citizen, there are doubtless many who enlist in advance of the call and are at present students in colleges of pharmacy. What applies to the latter in a degree also obtains with those who contemplate studying pharmacy. The schools should be kept filled as far as possible and to that end the efforts of the schools to persuade young women to enter pharmacy is timely.

Unfortunately, no provision has been made for exempting pharmacists as has been provided for medical and dental students.

A NATIONAL DUTY.

The Treasury of the United States has a great deal of money to raise and it cannot be raised by bankers alone. says Secretary McAdoo. The banks of this country can not alone sustain America's needs in this war and extend to our allies the essential aid which they must have to continue the war.

The rich of this country can not do it alone; the men of this country can not do it alone; the women of this country can not do it alone; but all of us, the people of the United States, disregarding partisanship, forgetting selfish interests, thinking only of the supremacy of right and determined to vindicate the majesty of American ideals and secure the safety of America and civilization can do the great and splendid work which God has called upon us to do.

THE SUPPLY OF SUGAR.

In reply to many inquiries that are being received regarding the sugar supplies for manufacturers of essential foods product, and appreciating, as we do, the necessity of both production and preservation of food supplies, as well as reflecting the policy of the Food Administration as bearing upon collateral industries such as manufacturers of cans and fruit jars, etc., and buyers of same, all manufacturers of essential food products are advised that they will be able to obtain their full necessary requirements of sugar for manufacturing purposes during the coming season.

This applies particularly to the packers of fruit, condensed milk, and such vegetables for the preservation of which sugar may be necessary, as well as to the housewives for usage in preserving purposes.

As soon as the car shortage is relieved, supplies of sugar will be available for the necessary preservation purposes. Shipments from Cuba are steadily increasing.

Dr. H. M. Whelpley has completed his thirtieth year as editor of *Meyer Brothers Druggist*, and the January number of that publication commemorates the event by a large issue in which printers art has been advantageously displayed. There are a number of interesting and historical articles, devoted to the growth of St. Louis as a drug and chemical market.

Mrs. Alonzo B. Stevens, wife of the dean of the University of Michigan College of Pharmacy, died February 6th, at Loma Linda, Cal. Mrs. Stevens had been sick for some time. During prior years Mrs. Stevens accompanied her husband to the annual conventions of the American Pharmaceutical Association.

Henry S. Wellcome, of Burroughs, Wellcome & Co., and member of the American Pharmaceutical Association since 1875, presented the British War Office a completely equipped motor bacteriology laboratory.

C. F. Ramsay, a frequent contributor to the Scientific Section, A. Ph. A., is now consulting chemist for Brewer & Co., of Worcester, Mass. For the past eight years Mr. Ramsay was engaged with Parke, Davis & Co., of Detroit.

Frederick Remington, nephew of Prof. Jos. P. Remington, deceased, a wireless operator on one of the American destroyers, has been singled out by the War Department for special commendation, for his conspicuous bravery in a recent engagement with a German submarine. The commendation assigns "efficiency, devotion to duty and gallantry in action in accord with the best tradition of the service."

Frank L. McCartney, president of the New York Branch of the American Pharmaceutical Association, has been appointed Captain in the U. S. Sanitary Corps and is now stationed in the Medical Supply Depot of New York. The Albodon Company, with which Mr. McCartney is associated, has given him leave of absence during the duration of the war.

OBITUARY.

ALFRED BIRCH HUESTED.

Dr. Alfred B. Huested, professor of materia medica and botany in the Albany College of Pharmacy from 1883 until last November, died at his home in Delmar, February 23rd. The deceased was born in Clifton Park, N. Y., May 15, 1840. At an early age he came to Albany where he made his home until 1910, when he moved to Delmar.

His early education was received in the public schools of Albany and the Albany Boys' Academy. When sixteen years of age he entered the drug business of Dexter & Nelliger, remaining with this firm until 1859 when he began the study of medicine. In 1862 he volunteered for United States Service as hospital steward. During the winter of 1863–1864, he was given a short leave of ab-

sence, when he returned to Albany and passed his medical college and state board examinations and was thereafter commissioned a first lieutenant and assistant surgeon in the 21st New York Cavalry. After the war he returned to Albany, where he opened a drug store at Hudson Avenue and Eagle Street. In 1886 he established the firm of A. B. Huested & Co., from which firm he retired several years ago.

Dr. Huested was a member of the first State Board of Pharmacy of New York and was president for sixteen consecutive years. Dr. Huested was a member of the Masonic bodies and retained considerable interest in the G. A. R., of which he was a member. Even at his advanced age he was active and always of a jovial disposition. He was remarkably well preserved both in mind and body and thoroughly in love with his work. Mrs. Huested survives the deceased and also three sons and three grandsons.

Dr. Huested was president of the New York Pharmaceutical Association from 1880 to 1884 and joined the American Pharmaceutical Association in 1879. He and Mrs. Huested have been quite regular attendants at the annual conventions of the Association.

E. G. E.

ABSTRACT OF A TRIBUTE BY PROF. G. V. DILLENBACK ADOPTED BY ALBANY COLLEGE OF PHARMACY

Alfred Birch Huested, M. D., Ph. G., Secretary and Professor of Botany and Materia Medica of the Albany College of Pharmacy, passed away February 23, 1918. The faculty and college have suffered an irreparable loss. Mature in wisdom, gentle in manner, firm but not aggressive, and daily sacrificing his own opportunities for the happiness and welfare of others, his death leaves a void not easily filled in the college, in the world of pharmacy and in society. He had few equals as a teacher. His training had peculiarly fitted him for the work that was to round out his life. * * * *

He was the friend of everybody and beloved by all and his memory will ever remain fixed in the minds of his associates and the hundreds of alumni who have finished under his instruction. It was not alone his teaching ability but his genial manner and even disposition which endeared him to all, since his presence created an atmosphere of cheer and happiness.

It was ordered that this memorial be entered in full upon the minutes, and that a copy of the same be transmitted to the family of the deceased with an expression of heartfelt condolence on the part of the members of the faculty and that it be published in one of the newspapers of the city.

WILLIS G. TUCKER,
Dean.

IN MEMORY OF JOSEPH P. REMINGTON.

(*Continued.*)

FRANK CAIN.

I have always found Professor Jos. P. Remington a loyal friend for democracy in the profession of pharmacy. In the fight fo educational freedom of all druggists, no better faith could be exemplified in the brotherhood of man, than the great spirit of fraternalism of Prof. Remington.

He had an abiding faith in education and the ultimate victory which education would bring for the uplift of pharmacy to a level equal to that of any other profession. All his cherished hopes will yet be realized—for the life-work of Prof. Remington will grow to a full materialization of all that is good for American pharmacy.

In memory of Prof. Remington it may be said: He was true to work and true to men: two characteristics which made him possessed of a noble fidelity. His superior knowledge, his work, his moral courage combined with simplicity, gave him gentlemanly dignity. He is highest who stoops to lift up the right above the wrong; therefore, he was our leader. Friends from every walk of life will miss Professor Remington, but pharmacists suffer a severe loss.

WILLIAM B. DAY.

When the history of American Pharmacy is written, Joseph Price Remington will, by common consent, be accorded the highest position among the pharmacists of his time. Thoroughly versed in the practice of his profession, he was at once a teacher of rare ability and a peerless leader of men. His winning personality gained for him a legion of friends to whom his life will be an inspiration and his memory a benediction. It may well be said of him as was said of the poet: "None knew thee but to love thee; none named thee but to praise."

JOHN C. WEYER.

Charles A. Apmeyer, Secretary of the Cincinnati Branch, A. Ph. A., reports the death of John C. Weyer, well-known Cincinnati pharmacist at the age of 79 years. Mr. Weyer died January 28th, and Mr. Apmeyer speaks of

him as a sturdy, true friend, a gentleman of high attainments, a firm advocate of better education for pharmacists, always striving by his individual efforts to place his much loved profession, pharmacy, upon a higher and more scientific plane. Pharmacy deplores the loss of one of her loyal sons.

He was a director of the Cincinnati College of Pharmacy and served as president of the Ohio Board of Pharmacy. He conceived the idea of druggists' fire insurance and twenty-eight years ago organized the Retail Druggists' Mutual Fire Insurance Company, of which he was manager.

SOCIETIES AND COLLEGES.

AMERICAN DRUG MANUFACTURERS' ASSOCIATION.

SEVENTH ANNUAL MEETING.

As president of the American Conference of Pharmaceutical Faculties, Professor Kraemer personally acted as the delegate and delivered a message of great importance for the development of pharmacy at the present time. The Association believes that it will strengthen the work of the university schools as it outlines a program for the future. During recent years there has been considerable pressure to introduce into the curriculum of the college courses a vast amount of ordinary commercial teaching. On the other hand, there is a strong tendency on the part of very many students attending the universities to extend their time until they become proficient in original research. The only deterrent to these advanced students has been the question as to whether the manufacturers would avail themselves of the abilities of these especially trained men. The expression of very many of the American Drug Manufacturers is that they are in need of such men and that they would provide every facility at their disposal for the development of original research and that they would amply reimburse these investigators in their laboratories for any discoveries of merit which they might make.

In concluding Dr. Kraemer said:

"It does not require much thought as we consider the permanency of institutions to come to the conclusion that (1) mankind will always require medicines; (2) that drug manufacturers will supply the remedies; and (3) the universities must train the experts who are the back-bone of our pharmaceutical industries. It is self-evident, therefore, that the men who are teaching the youths of our country, and are to take the places of your chemists and investigators, and assist you in continuing your establishments, ought to be practically conversant with the direction that the manufacturing industry in which you are engaged is developing. I am grateful to you for the encouragement I have received and for the message I can deliver to my colleagues of the American Conference of Pharmaceutical Faculties. The universities will not and must not fail you at this critical period in the world's history when mankind is looking to the properly trained men of our country for the means of prolonging and preserving life.

SOME OF THE RESOLUTIONS ADOPTED AT THE AMERICAN DRUG MANUFACTURERS' ASSOCIATION.

PATENT LEGISLATION.

Resolved, That the American Drug Manufacturers' Association hereby reaffirms its opposition to any patent legislation discriminating against medical, chemical and pharmaceutical discoveries.

POWERS OF DELEGATES TO N. D. T. C.

Resolved, That it is the sense of this Association that whenever all the delegates to the National Drug Trade Conference are unanimous upon a question of legislation before the conference for decision and action, that our delegates be empowered to act and vote according to their best judgment on that question.

REPORT ON PROGRESS OF CHEMISTRY, PHARMACY AND BIOLOGY.

Resolved, That realizing and appreciating that an association of the size and importance of this Association should, as part of its annual work, present a concise, interesting résumé of the progress that has been made in the scientific and industrial branches of chemistry and pharmacy and in consequence of a recommendation of our Committee on Standards and Deterioration, your Executive Committee recommend the appointment by the President of a reporter upon the progress of chemistry and pharmacy and biology, who shall present at the next annual meeting a concise interesting account of what has transpired in the past year.

UNAVAILABLE DRUG SUPPLIES.

WHEREAS, It has been found that certain drugs and chemicals of the U. S. P., such as, for example, scammony root and resin, have not been available for some time past for manufacturers and the drug trade, and

WHEREAS, Certain other drugs and chemicals, as, for example, Mexican scammony root and resin, can be used effectively and are generally admitted to be as valuable and effective as those not available; and

WHEREAS, Government war orders for medicines are being delayed because of the absence of these official drugs from commerce now; therefore be it

Resolved, That this Association urgently request the U. S. P. Revision Committee make official these available and at present unofficial drugs and chemicals, such as those above referred to, at the earliest possible moment.

LAWS APPLYING TO PHARMACY SHOULD BE ADMINISTERED BY PHARMACISTS.

Resolved, That medicine and pharmacy are sister sciences, each having its proper and peculiar function to perform in the conservation of health and life; that these functions, while coöperative, are independent; that it is the function of medicine to diagnose and prescribe and that pharmacy cannot respect the views of particular factions in the medical profession without invading this function by denying to others the means of treating the sick by those methods and medicines they prefer. The American Drug Manufacturers' Association therefore deprecates any political activity on the part of physicians or pharmacists seeking the placement of men of particular views in official positions or connections for factional purposes as unfair and debasing to both medicine and pharmacy.

The Association is therefore in hearty sympathy with the opinion expressed by Prof. James H. Beal that there is no better reason why laws applying to druggists should be interpreted by physicians than that laws applying to physicians should be interpreted by druggists; and be it further

Resolved, That it is the opinion of this Association that laws applying to pharmacy should be administered by men trained in pharmacy.

DESIRABILITY OF FEDERATION OF DRUG INDUSTRIES.

It is hereby *Resolved* by the American Drug Manufacturers' Association that it approves the desirability and wisdom of organizing and federating pharmacy and the drug interests of this country as conducive to the best interests of pharmacy and all said drug interests; and it is further

Resolved, That this Association appoint three delegates, when invited to do so, to attend a conference of all the national drug associations when this may be called and report back to this Association the results and conclusions of said federation conference for subsequent action by this Association.

SHERMAN ACT SHOULD BE REPEALED.

WHEREAS, the Sherman Act as construed by the courts is so far reaching as to prevent harmless coöperation of kindred industries in the prosecution of the great war in which we are now engaged; and

WHEREAS, The Clayton Act and the Act creating the Federal Trade Commission effectually control the evils reached by the Sherman Act; and

WHEREAS, Said Acts are enforced by the Federal Trade Commission clothed with powers which enable it to determine promptly and in advance whether any proposed combination for coöperation is in under restraint of trade or not; therefore be it

Resolved, That it is the sense of the American Drug Manufacturers' Association that the Sherman Act should be repealed.

REVISION OF PRICE LIST NOMENCLATURE.

Resolved, That this Association heard with interest the suggestion by the Committee on Standards and Deterioration that a revision of the nomenclature of our price lists and labels would be desirable and advantageous to the physician, manufacturer, jobber, retailer, and patient and recommends that the question be referred to the incoming Executive Committee for its careful consideration and action.

ANTI-NARCOTIC LEGISLATION.

Be it Resolved that the Association reiterate its position that the Harrison Anti-Narcotic Law has been remarkably efficient in reducing the illegitimate use of habit-forming drugs and only requires amendments restoring the possession clause in Constitutional form and making certain changes in the Exemption Section, notably, one removing the exemption on Paregoric; and be it further

Resolved, That the resolutions of the Joint Conference held last April at the suggestion

of this Association be endorsed in the form which they took when revised by the National Drug Trade Conference.

ENDORSE WAR SAVING STAMPS.

Resolved, That this Association recommends to its members the active support of the United States War Saving Stamp Movement in the belief that this means of contributing to the support of the War makes possible the utilization of both small and large savings and encourages thrift among small wage earners.

AFFILIATION WITH METRIC ASSOCIATION CONTINUED.

Resolved, That the Association continue the affiliation with the American Metric Association; and be it further

Resolved, That it is the sense of this organization that the adoption of the metric system must come not by arbitrary legislation, but by a gradual adjustment as the people become educated to it and as equipment and materials based on present standard need to be replaced; and be it further

Resolved, When the size of label permits, we recommend to our members that the metric equivalent be stated thereon.

WAR SERVICE COMMITTEE.

WHEREAS, It became necessary during the past year for your Executive Committee to name a War Service Committee to represent the manufacturers of pharmaceuticals and medicinal chemicals, and be the means of touch of the Government with said manufacturers during the war; and

WHEREAS, It appeared to your Executive Committee that each branch of the drug industry should be represented by its own war service committee; and

WHEREAS, The Committee thus named has since been officially recognized by the War Service Executive Committee of the U. S. Chamber of Commerce; therefore be it hereby

Resolved, By the American Drug Manufacturers' Association that such actions of the Executive Committee be the same and are hereby endorsed by this Association with the understanding that the size of this Committee may be enlarged by the incoming President of this Association.

AFFILIATION WITH N. D. T. C AND C. C. OF U. S. Continued.

Resolved, That the Association continue its affiliation with the National Drug Trade Conference and that the proper officers be and are hereby instructed to pay its assessment of $50.00.

Resolved, That the Association continue its affiliation with the Chamber of Commerce of the United States of America.

PHILADELPHIA COLLEGE OF PHARMACY.

Prof. Charles Herbert LaWall, heretofore associate professor of Pharmacy, has been elected dean of the Faculty of the College, to succeed the late Prof. Joseph P. Remington. Dean LaWall has been intimately associated with the college in a teaching capacity for nearly eighteen years. He has also been nominated for the full professorship of the Course in Theory and Practice of Pharmacy, and Prof. E. Fullerton Cook for the full directorship of the Pharmaceutical Laboratories.

Prof. Julius W. Sturmer, at the same time, was elected dean of the Post-Graduate and Special Courses, which include the bacteriological and microscopical departments. Prof. Sturmer, until the recent amalgamation of the two colleges, was dean of the Department of Pharmacy of the Medico-Chirurgical College.

Prof. Frank X. Moerk has been elected director of the Technical Chemical Courses. Professors LaWall, Sturmer and Moerk constitute the new executive officers of the faculty. At the invitation of the board of trustees of the College, the new executive officers will hereafter be present at all meetings of the board and will take active part in its deliberations.

Each month takes its toll of students from the class roll. At the last report the number of students and last year's graduates in military or naval service has reached over the two hundred mark.

In line with the nation's food conservation program, the customary annual banquets of the class organizations and fraternities have been temporarily postponed.

President Howard B. French is serving in an official capacity as chairman of one of the committees dealing with the housing problems near the Government's new shipbuilding plants in the League Island district.

UNIVERSITY OF KANSAS, SCHOOL OF PHARMACY.

Dean Sayre of the Kansas School of Pharmacy, advises that the Chamber of Commerce of Lawrence has adopted a resolution favoring

the creation of a pharmaceutical corps in the Army. The resolution follows:

Resolved, That the Chamber of Commerce of Lawrence, Kansas, interested in the promotion of all projects for the advancement of national as well as local welfare, join the pharmacists of Lawrence and the faculty of the School of Pharmacy of the University of Kansas, in urging the passage of the Edmonds Bill H. R. 5531, convinced that the establishment of a pharmaceutical corps in the U. S. A. will greatly increase the efficiency of the medical service of the army—whereby dispensing of medicines will be in the hands of trained men skilled in this coördinate branch of medicine. The establishment of this proposed corps will measurably relieve the already overburdened physicians and surgeons so that they may devote their special attention and care to the treatment of our soldiers in the various hospitals.

TEMPLE UNIVERSITY, DEPARTMENT OF PHARMACY.

In the November issue, 1917, on page 987, school 53, item 3, an error was made. This should have been 45 instead of 11. In justice to Secretary Jordan, it should be said that the error occurred in the Journal Office, the ditto mark of a pencil copy being taken for the figure 11, whereas it should have referred to the prior statement "that this report was made before commencement and hence the number of graduates could not be given." Since this time Dean John R. Minehart has given us the number of graduates which, as indicated, was 45.

THE PHARMACIST AND THE LAW.

FEDERAL EXPLOSIVES LICENSES.

An Act of Congress (*Public Document* No. 68, Sixty-fifth Congress) to prohibit the manufacture, distribution, storage, use and possession in time of war of explosives, and the ingredients thereof, provides that a license from the Bureau of Mines is necessary for every person, firm or corporation, to purchase, possess, sell or use, any explosive or the ingredients thereof.

1. It is necessary for pharmacists and druggists to make application for such a license.

2. It is necessary for institutions of learning, for instance, colleges, high schools, etc., to make application for said license.

A chemist conducting a commercial laboratory must make application for the license, if any of the enumerated substances are on hand in quantities of one ounce or over.

Any violation of this Act is punishable by a fine of not more than $5,000 or by imprisonment of not more than one year, or both fine and imprisonment.

The Bureau of Mines has published the attached list of articles requiring licenses under this Act.

The purchase, possession, sale or use of anyone of the ingredients herewith listed below in amounts of *one ounce or over* requires a Federal Explosive License.

Bichromates: ammonium, potassium, sodium; chlorates: barium, potassium, sodium, strontium; chromates: ammonium, barium, calcium, chrome green, chrome yellow, lead, potassium, sodium; nitrates: ammonium, barium, copper, ferric, lead, magnesium, nickel, potassium, silver, strontium; nitric acid: aqua fortis, fuming, nitric acids of all grades and strengths, mixed acids; perchlorates: perchloric acid, potassium; perborates: magnesium, sodium, zinc; permanganates: calcium potassium, sodium; peroxides: barium, calcium, magnesium, oxon (cubes and cartridges), sodium, strontium, zinc; phosphorus.

FLOOR TAX ON ALCOHOL HELD TO HAVE BEEN ILLEGALLY ASSESSED.

The floor tax on alcohol to be used for nonbeverage manufacturing purposes has been declared illegal.

In a comprehensive opinion rendered by Attorney General Gregory, the assessments, made by collectors, on alcohol in the possession of manufacturers of drugs, medicine, perfumery, toilet articles, etc., at the time the war revenue act of October 3, 1917, became operative, were illegally assessed. The tax amounted to $1.10 per proof gallon.

RULINGS UNDER WAR REVENUE LAW.

The following additional regulations applying to medicinal and toilet articles were furnished to the N. W. D. A. by B. C. Keith, Deputy Commissioner, of Internal Revenue under date of January 25, 1918.

Where toilet preparations or proprietary preparations of a medicinal character are prepared by a retail dealer on his own premises and sold exclusively to his own customers, such a dealer manufacturing his own products is regarded under the Act as a manufacturer and will be required to pay the tax.

Where a medicinal preparation is "held out

or recommended" as a remedy, even though such recommendation is intended for physicians only, it is a holding out to the public through the physician and is subject to the tax imposed.

Where medicinal preparations are sold under labels which do not indicate that the formula is published, they will be construed to be prepared under secret formula, unless affidavit or other evidence is submitted to show that the formula is not a secret.

Preparations made in accordance with formulas, contained in the United States Pharmacopoeia and National Formulary by pharmaceutical manufacturers and druggists having no special proprietary right to such formulas, and bearing printed labels giving direction as to use, when not held out or recommended by the manufacturers, vendors, or proprietors as proprietary preparations, or as remedies, or specifics for any disease or affection, are not taxable under paragraph (*h*), Section 600.

If there is not any claim or indication that a medicinal preparation is proprietary and no disease or affection is named for which it is claimed that the medicine is a remedy, the tax does not attach.

Where a medicinal preparation is advertised under the name or initials of the manufacturer, or if any name in the possessive case is used on the label or on literature describing the preparation, the tax is imposed.

A retail dealer, manufacturing a patent medicine by a private formula, is subject to the "manufacturer's" tax even though he sells such a product only in his retail store.

SUGGESTIONS FOR THE CONSERVATION OF SUGAR USED IN THE MANUFACTURE OF SODA FOUNTAIN BEVERAGES.

The letter following was received by Secretary F. E. Holliday, of the N. W. D. A., from W. T. Harper, Ottumwa, Ia. Such procedure, as recommended, would require the consent of Federal and State authorities. Under the circumstances regulations authorizing the manufacture, as a conservation measure, might perhaps be provided, but until then, in our opinion, would be inadvisable. The letter reads:

"The writer's connection with the Food Administration has brought home for more serious thought some things in connection with our business in which a great many of our members will be interested.

"We understand there is now being taken data from the owners of soda fountains as to the quantity and kind of materials used in serving soft drinks. We were already aroused to the fact that the campaign for decreased consumption is being waged all over the country. A lot of sugar is used in soda fountain drinks and soft drinks of all kinds. A lot of sugar is necessary, but there is a lot of it that is wasted.

"The question in our mind is, will this be permitted and will soda fountains and soft drinks be considered as non-essentials and eliminated from business?

"The elimination of any business as a non-essential is a serious problem and the Administration will probably hesitate before doing this. The loyal support, however, of any such business to the Administration will help that business and help the Administration wonderfully.

"In giving this matter consideration we have felt that the owners of soda fountains should eliminate sugar syrup either in the form of rock candy syrup or syrup by percolation from sugar as much as possible. This can be done by using a certain amount of glucose. The quantity of syrup used in any drink has been too much at most places for the profit of the retailer and for the good of the consumers, but it tickles their taste to have a sweetened drink and hence it has been abused.

"Now, the same amount of syrup can be given but it can be given in a different form, will not use as much sugar and will not be quite as sweet. This syrup can be made by using two parts of rock candy or sugar syrup, one part of glucose and one part of distilled water. This will eliminate 50 percent of the sugar used, would still give them a sweetened drink and would reduce the cost to the dispenser.

"We have investigated this matter and find that this formula has been used in the past by soda fountain owners who believed in running them for profit, and the service that they have given was satisfactory and they did a good business on this formula. We believe that something of this kind should be worked out and should be bulletined broadcoast across the United States so that every jobber of soda fountain supplies can give this information to his customers, thereby cutting down quickly the use of 50 percent of the sugar which has been used for this purpose."

CHANGES OF ADDRESS.

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of the change of address is received before shipment or mailing.

Both the old and the new address should be given thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

CHANGE OF ADDRESSES SINCE DECEMBER 5, 1917.

ROBERTS, J. G.
From 35 Poplar St., Philadelphia, Pa.
To 1634 N. 62nd St., W. Philadelphia, Pa.

ROSENZWEIG, B.
From 495 8th Ave., Brooklyn, N. Y.
To 381 Gold St., Brooklyn, N. Y.

BOADA, F. P.
From Campanrio No. 70 (bajos), Habana, Cuba.
To 27 entre Ay Paseo, Vedado, Habana, Cuba.

FRY, N. G.
From 401 W. North Ave., Chicago, Ill.
To 421 W. North Ave., Chicago, Ill.

GERSHENFELD, LOUIS.
From 1732 S. Ninth St., Philadelphia, Pa.
To 5807 Haverford Ave., Philadelphia, Pa.

TAYLOR, WM.
From 161 W. 140th St., New York, N. Y.
To 515 W. 157th St., New York, N. Y.

BREWER, J. ED.
From 1705 Cherry St., Philadelphia, Pa.
To 1541 Arch St., Norristown, Pa.

NOVACK, H. J.
From 595 Willoughby, Brooklyn, N. Y.
To 3131 W. Norris St., Philadelphia, Pa.

LIEBERSTEIN, LOUIS.
From 223 S. Euclid Ave., St. Louis, Mo.
To 2235 Euclid Ave., St. Louis, Mo.

KURTZ, I. W.
From 316 Clark Ave., St. Louis, Mo.
To 3rd and Cedar Sts., St. Louis, Mo.

NITARDY, F. W.
From 1105 Broadway, Denver, Colo.
To 66 Orange St., Brooklyn, N. Y.

HUNT, REID.
From 240 Longwood Ave., Boston, Mass.
To Harvard Medical School, Boston, Mass.

RHEA, H. M.
From Somerville, Tenn.
To c/o Revenue Agent, Huntington, W. Va.

WAGENER, L. R.
From Bangor, Mich.
To 203 N. Ingalls Ave., Ann Arbor, Mich.

VIEHOEVER, A.
From Washington, D. C.
To Dept. of Chemistry, Urbana, Ill.

CAHAN, S.
From 864 N. 10th St., Philadelphia, Pa.
To S. W. Cor. 8th and Dickinson Sts., Philadelphia, Pa.

MILLER, ROBERT J.
From 1800 Green St., Philadelphia, Pa.
To 114 S. West St., Carlisle, Pa.

PUBLICATIONS RECEIVED.

Standard for Pituitary Extract, Apparatus for Studying Effect of Drugs, Slide Holder and Protector for Warming Stage, Deterioration of Cannabis.—The Lilly Scientific Bulletin, Series I, No. 8.

A Study of Oil of Chenopodium, By W. H. Zeigler, Professor of Pharmacology, Medical College of the State of South Carolina.

The Preparation and Standardization of Ovarian and Placental Extracts, By. W. H. Morley, M.D.—From the Research Laboratory of Parke, Davis & Co., Detroit, Michigan. Also from same source:

The Frequency and Significance of Dysfunction of the Internal Secretory System in the Feebleminded, by Carey Pratt McCord, M.D., Detroit, and H. A. Haynes, M.D., Lapeer, Mich., and *The Pineal Gland*, the Pineal Glands Influence upon Growth and Differentiation, with Particular Reference to Its Influence upon Prenatal Development, by Carey Pratt McCord, M.D., Detroit, Michigan.

Missouri Druggist, Bulletin of the Missouri Pharmaceutical Association, Vol. I, No. 6.

The Pennsylvania Pharmacist, Vol. I, No. 1, to be published quarterly. The issue reflects credit on Editor R. P. Fischelis. A timely

editorial is entitled "Who Gets the Credit." We quote a few lines of this message:

"The day on which pharmacy reaches the degree of 'bigness' which will recognize accomplishment by the body pharmaceutic as paramount to accomplishment by any individual organization in that body, will mark the birthday of a new pharmacy—one which will wield a powerful influence among professional bodies. * * * There never was greater need for the pharmaceutical interests to be 'big' than there is right now. We want a pharmaceutical corps in the army. If we get it there will be plenty of credit to go around. Our national, state and local associations should realize this and work harmoniously, unitedly and everlastingly until the big object is accomplished."

Sun Dial Address.—At the celebration of New Year's Day, 1918, at Girard College, Philadelphia, the Early Eighties Alumni Association presented their Alma Mater with a Sun dial as their Memorial, when this address of Henry Kraemer, Ph.D., president, was read by Joseph M. McCutcheon, vice-president, on the occasion of the presentation.

JOURNAL ANNOUNCEMENTS.

Subscriptions: Annual subscriptions in advance, including postage: United States and Mexico, $4.00; Canada, $4.35; foreign countries, $4.50. Single copies, 35 cents. Remittances should be made payable to Treasurer H. M. Whelpley, but mailed to JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, Easton, Pa., or 253 Bourse Building, Philadelphia, Pa. Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers.

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Contributions: The JOURNAL accepts no responsibility for the opinion of its contributors. Contributions should be type-written and sent to the Editor; use only one side of the sheet for writing, and double-space the lines. Articles are accepted for publication on condition that they are contributed solely to this JOURNAL; and "all papers presented to the Association and its Branches shall become the property of the Association, with the understanding that they are not to be published in any other publications than those of the Association, except by consent of the Committee on Publication." (By-Laws, Chapter X, Article 11.)

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Advertisements: Communications relating to advertising should be sent to the Editor. Forms close on the first of each month, and copy should be in by the fifteenth of the month preceding date of issue, to receive proof. Date of issue—the fifteenth of the month. Advertising rates sent on request.

Membership: Applications for membership in the American Pharmaceutical Association may be made of any of the officials. The annual payment of five dollars covers the annual dues and subscription to the JOURNAL. Members receive, also, the publications of the Association that are distributed free of charge.

Further information will gladly be furnished by any of the officers of the Association and members.

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SAMUEL CLEMENTS HENRY

CHICAGO, ILL.

Chairman House of Delegates, American Pharmaceutical Association, 1917–1918

SAMUEL C. HENRY